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Journal of Electricity and Western Industry

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Journal of Electricity and Western Industry

A semi-monthly chronicle of western events, advocating the economy, efficiency and convenience of electric power for all industries of the West—manufacturing, agricultural, mining, merchandising, home building and home making. Interpreting the value of electrical development to the business and financial man, the industrial man, the power man, wholesaler and retailer, contractor and constructor, engineer and home owner.

Because of the abundance of water power in the West susceptible of economical development, a dependable, uninterrupted supply of cheaper electric power is assured for these industries. The basic industry of the West—hydro-electric power generation—for which Journal of Electricity and Western Industry is the spokesman, is therefore logically and inseparably linked to the growth and prosperity of all phases of our daily life and business.

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WHERE ELECTRICITY SERVES THE FOOD INDUSTRY

The entire prune supply of the United States, one-fifth of the world's citrus fruits, 95 per cent of the raisins and practically all the dried apricots, canned asparagus and canned salmon are produced in that part of North America lying West of the Rocky Mountains. Through improved illumination, better operating conditions and increased production made possible through motor drive, electricity is thus aiding in the packing houses and canneries of the West to prepare the larger part of the preserved food used on the world's dinner table. With the possible exception of the varied field of metal trades, the canning and packing of food products consumes more electricity than any other industry of this region.

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Journal of Electricity and Western Industry

A publication devoted to the upbuilding of the great industrial West and the countries bordering on the Pacific

A McGraw-Hill Publication

Interpreting Western progress through the application of electric power, light, and heat in industry and in the home

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Vol. 47, No. 4 SAN FRANCISCO, AUGUST 15, 1921 Per Copy, 25 Cents

The Passing of the Closed Shop in the West

A certain renewed hope and enthusiasm have come to those who have been thoughtful onlookers in the labor difficulties that have been under way in the West during the last ninety days, particularly in reference to the so-called "builders' strike" which has taken place in San Francisco.

The entire situation is symptomatic of the general labor conditions. With the rise in the cost of living, wages increased, maintaining a proper and very steady relation to food, rent and clothing prices. As these costs go down, it is only natural that there should be an inevitable drop in wages.

In the San Francisco situation, labor made the claim that the arbitration board was chosen to decide between the maintenance of former wages or a wage increase which was under dispute. The contention of the employers and the weight of public opinion was to the effect that an arbitration board's decision was final and its repudiation by labor was a breach of good faith. At any rate, the board used greater wisdom than those who selected it and reported in favor of a wage reduction on the basis of lower living costs. It seems probable at the present time that not only this reduced wage will be accepted as the basis for settlement, but that the American Plan will be adopted for the building trades throughout the San Francisco Bay region. The American Plan does not aim at the abolishment of the union, but insists that to limit employment to union members is an unAmerican restriction. The safeguard of a published scale of wages is provided but questions of opportunity of employment are to be settled between the employer and employees of each individual plant.

It is now generally recognized that the rejection of the arbitration board's decision was brought about, not by the rank and file of intelligent American manhood that is to be found in the membership of union labor, but rather by the domination of certain individuals who are responsible for such discredit as pertains to the situation. Organized labor should be given every opportunity to fulfill its mission of helpfulness, for there is a great service it can perform toward the upbuilding of the West. But there must not and there cannot be allowed any action which will bring about injustice to citizenry generally through the action of any one class.

Although it is now generally recognized that the closed shop has passed in the West, let not this lead to injustice on the part of employers and let them not vaunt themselves that now is an opportunity to apply the hand of an iron master. Citizens generally will not tolerate the institution of any practices between labor and employer that will not give to every citizen involved the open chance of employment, the opportunity to serve society and the freedom to go and do as any law abiding citizen may wish. The West is to be congratulated upon the trend of events in San Francisco and other Pacific Coast cities.

Plans for Discussion of Western Agent Problems

WEIGHTY problems have arisen from time to time in the agent-jobber-manufacturing field of the West that call for the thoughtful consideration of all those engaged in these lines of activity. The appearance in the columns of the Journal of Electricity and Western Industry, issue of June 15, of an extensive list of Western Representatives, has stimulated such widespread discussion and interest in the problems that the Journal of Electricity and Western Industry is initiating plans for an early informal gathering of these representatives to talk over certain of the outstanding problems in the trade, and to consider the desirability of calling together informal organizations in San Francisco, Los Angeles, Portland and Seattle to discuss problems of this nature from time to time, or, possibly, the organizing of an inclusive coast-wide movement.

At any rate, so much interest has been manifested in the idea that it would seem that an informal luncheon should be called at an early date, and to this end letters are being sent out to a number of those interested to determine the concensus of opinion in the matter. Readers of the Journal of Electricity and Western Industry will be advised at a later date concerning the outcome. Meanwhile, problems of credit, transportation rates and distribution costs, as well as a number of other related discussions are of such a pressing nature that a start should be made at an early date with a view to getting together all those involved.

Electric Range Sales Get Under Way

FOR some time past there has been a feeling that in coming months the sales of the electric range and the electric water heater would experience an unusual activity due to the fact that uses of electricity are yearly becoming more widely extended in the home and also that, with the major power development program now well under way in the West, the electrical idea is being more generally sold to the people. In the issue of the Journal of Electricity and Western Industry for August 1st, 1921, there was set forth the details of a campaign that has been initiated by the Great Western Power Company of Central California, which should have far-reaching effects throughout the West.

Frequent attention has been called in these pages to the fact that certain features of electric range merchandising would seem to be central station problems for years to come. The servicing and upkeep of the ranges and the financing of extensive electric range sales are matters with which the central station seems best able to grapple at the present time. A tentative plan by which some of this work might be carried on through the channels of the electrical dealer has been worked out in southern California, but has not yet been put into practice. This is a system by which the manufacturer, jobber and other interests volunteer to finance the initial publicity work necessary to put a range campaign into swing, the dealer providing display space and putting back a certain share of his first profits into further promotional work. Exact details of this plan have not yet been worked out, however, and its success has not yet been tested.

In any case, there is an opportunity for the contractor-dealer to come in on the sales in handling the wiring installations which must follow with the sale of each range. In the instance just mentioned, the contractor-dealer is able to figure in the wiring at the cost to the central station and thus save the customer the extra charges that would be involved, at the same time profiting to a certain extent on the liberal financing allowed by the central station.

There is considerable activity noticeable in many districts of the West relative to the electric range and the early institution of sales campaigns. This recent venture put forth in California will, as a consequence, be followed with great interest throughout the West. The step is one which opens up numerous business getting opportunities and a resultant feeling of optimism is at once observable by those who are watching this renewed activity.

The Need for an Engineering and Industry Building

WHEN visiting any one of the great metropolitan centers of the West—Seattle, Portland, Spokane, Salt Lake, Los Angeles, San Francisco—one is impressed with the fact that there are in these cities great structures devoted to commercial enterprises, erected as monuments to the progressive spirit of insurance, banking and other specific lines of business in the district. But where are the monuments befitting the enthusiasm, daring and enterprise which have gone into the building of the engineering and industrial achievements of the West? The time has now come when men of engineering and industry should give thoughtful consideration to the building (in each one of these cities) of a monument to engineering and industry.

By modest beginnings great enterprises become future successes. Why should not each engineering organization or group of engineeering organizations, and such allied industrial organizations as may exist in the various communities, begin to set aside, from time to time, even in a very modest way, sums of money as a building fund that may make possible the great structure at a later date? As a matter of fact, well known capitalists have already offered sufficient funds to erect these buildings but it would seem better that such an enterprise should be owned and operated in a truly democratic manner. The actual participation in its ownership by the members of engineering clubs and industrial organizations in the communities would make it the kind and type of building desired. With club rooms and headquarters located on the top floors and offices maintained by technical and business organizations, civic centers for the engineering and industrial life of the communities could be built up to form a lasting monument to western industry.

The Absurdities Involved in Fixing Prices by Jury

A RECENT condemnation suit resulted in fixing the price of important water rights associated with a power development enterprise in one of our western states. The sales price, as is usual in such proceedings, was fixed by jury following the hearing of testimony from both interested parties. And, as is unfortunately also usual in such cases, the price ultimately fixed was arrived at by splitting the difference between the figures offered by either side. Now, the actual value of these rights may have been more or less than the distance between Omaha and Chicago—but there is about as much reason why it should bear any relation to that figure as there is why it should be the average between any two figures at all.

The full absurdity of this method of price fixing is seen in such cases as that of a land condemnation suit some time ago, in which the city involved offered something like $15 per acre for unimproved land, a figure corroborated by real estate experts. The owners claimed a value of $500 per acre, on the ground, apparently, that they could. With even-handed justice, the jury split the difference, allowing $245 per acre, for land which when cultivated, at that time was selling for not more than $30. The danger is apparent. The lower figure cannot go below zero—the upper is restrained only by the limits of the imagination. If the jury may be counted upon to average everything offered, it is an inducement to the owner at least to double the sum he thinks adequate—to the purchaser to offer nothing at all. Allowing for the possibility of a little less conscience on the part of the owner, it is conceivable that he may not stop at the double mark.

Both land and water rights have values which it is possible for experts to ascertain by other methods than guesswork—and there is no excuse for the present confusion in these matters. Why should a jury be asked to decide on prices at all? Would not the more equitable proceeding place the question of whether the property was to be taken over or not in the hands of the jury, leaving the matter of prices to be settled by a board of neutral experts in the particular field, these experts to be chosen by the court? No possible injustice under this method could equal those perpetrated under the present system.

Importance of Foreign Markets For Western Products

UNLIKE many of the thickly settled manufacturing centers of the country, the export business of the West far outdistances its imports. It is one of the great producers of raw materials. From a food standpoint, it feeds itself, with a tremendous surplus which must find consumption in other markets. This is also true of lumber production, in some fields of mineral production and in other specialized lines. The moving picture industry of the world, for instance, may be said to have its center upon the Pacific Coast.

The eastern and middle western sections of the United States, of course, form the major market for these products, but that this market is insufficient to absorb all that the West can produce has been clearly shown during the past few months of depression during which export trade very largely ceased.

The analysis of the present trade situation and the outlook for the future written by a member of the oldest shipping house on the Pacific Coast, which appears on another page of this issue, clearly points out the possibilities in this field as they appeared at the darkest moment of the trade depression. Since that time the outlook has brightened along all lines and business is active, although at prices considerably lower than those to which western fruit men have been accustomed.

Much of the future of the West, both from an agricultural and industrial standpoint, depends upon the development of its foreign trade—and all problems which affect this field are of vital interest to business men in every branch of industry.

The New Editorial Vision for the Industrial West

INDUSTRY in the West may be defined as the assembling of raw materials, the fabrication of these into a marketable product, and the distribution and sale of the finished articles; and industry must perform a distinct service and be conducted at a profit. As a consequence, all educational effort in the West, particularly editorial effort, must be focussed to aid industry in the solution of its problems. The trade and technical papers must be the medium through which pertinent information that is essential to industrial development is collected. It must do more than collect information; it must become a leader in the development of industry generally through the dissemination of the best thought on industrial matters. It must interpret the outstanding features of engineering, economic, political and social tendencies that effect industrial growth, and to the close student of affairs in the West it must bring the firm conviction that the development of hydroelectric energy is basic. To this end the Journal of Electricity and Western Industry will more and more endeavor to collect industrial material and put it in form available for reference in the West, and we ask the continued cooperation of industry generally throughout the West to enable us to go forward in this work. The cordial response called forth by the June 15th issue of this magazine, encourages us to reach out yet further in our efforts to promote the upbuilding of the West.

Below are listed some of the features which will make the Journal of Electricity and Western Industry of concrete service during coming months to all interested in the upbuilding of industry in the West.

EACH ISSUE WILL CONTAIN:

Frontispiece

Editorials

Western Comment on Current Events with Letters to Editor
Editorial discussion of financial, trade promotion, legislative and other problems, also letters on important subjects from business leaders, representing the executives' own viewpoint on executive problems.

Builder of the West
The story of the men who have built the West and what they have done

Leading Articles on —
1. A power company topic —
Covering financial problems, public relations, sectional problems peculiar to the West, or the analysis of special engineering problems from the standpoint of economics and special service conditions.
2. An industrial situation —
Including the discussion of special industries from their business aspects, problems common to all industries, or production problems involving electrical applications, illumination, rate discussions, source of power, handling of electrical raw materials, stocks and supplies.
3. Problems of distribution and sales —
Of interest to dealers, jobbers and manufacturers
4. Special investigations on timely subjects —
The results of surveys or special analysis of business and other subjects of news interest.

Pictorial Series
Featuring applications of electric service—progress in the home, industrial and public utility construction, noteworthy records in western engineering and interesting developments in industrial progress.

Increasing Mill and Factory Production
A department devoted to readers' suggestions as to short cuts and new power applications that have reduced the cost of manufacturing.

Study Course
Lessons on electrical, mechanical and business subjects of direct value to contractor-dealers, electricians, master mechanics in idustrial plants and electrical salesmen.

With the Western Dealer, Jobber, Agent —
Business building suggestions for the store, distributions and warehousing methods, and advertising and sales promotion ideas.

ACTIVITIES OF THE WEST — BUSINESS-MAN'S SECTION

General News of the West —
News of selected interest, reports of western meetings and notes on dealer, jobber, and manufacturer activities.

Personals

Business Outlook in Western Market Centers —
The report of community thinking from the industrial centers of the West on activities that affect business conditions.

Construction News and Industrial Developments —
News of construction planned and under way in all industries, water permits, power and irrigation projects, etc.

Salvage
Cross angles and shadowgraphs on the comic side of the business world.

Western Comment on Current Events

Editorial Notes and Readers' Views on the Outstanding Aspects of Financing, Trade Promotion, Legislative and Associated Topics that have a Special Bearing on Western Business

State Power Aid for Municipalities

Initiative Measure Prepared by California Cities to Provide State Credit for Public Development of Water Power

The first step in a municipal power development campaign has been made in the announcement of the launching of an initiative measure in California to place an amendment to the state constitution upon the 1922 ballot, providing for state credit for the development of state water powers by cities and other public groups.

Among those who took part in the drafting of the proposed act were Clyde Seavy, city manager of Sacramento and former chairman of the State Board of Control; L. L. Dennett, counsel for the San Joaquin valley irrigation districts and representing the valley counties in the State Senate; Dr. John R. Haynes of Los Angeles; William J. Locke, city attorney of Alameda and executive secretary of the League of California Municipalities; Mayor Louis Bartlett of Berkeley; W. N. Matthews, attorney for the Los Angeles Board of Public Works; S. C. Graham of Los Angeles; Dr. Horace Porter, Mayor of Riverside; ex-Senator William Kehoe, Franklin Hichborn of Santa Clara, Francis J. Heney of Los Angeles, Charles W. Cleary of Tulare county, Senator William J. Carr of Pasadena, J. L. Matthews of the State Water Commission, J. P. Mallon of Oakland, Judge D. J. Hall, city attorney of Richmond; Albert Braundschweiger of Riverside, ex-Congressman William Kent and Rudolph Spreckels.

Under this legislation there would be created a California Water and Power Board, consisting of five members, four to be appointed by the Governor and the fifth to be the director of the Board of Public Works, ex-officio. The salary of the chairman and executive officer is set at $15,000, while the other members would be paid on a per diem basis of $20.

The board is given strong powers in the act. Procedure by which cities, towns, irrigation, water, reclamation or public utility districts, acting singly or in groups, may enter into contract with the board for the construction of works and the supply of hydroelectric energy is provided. The contracting political subdivisions would agree to purchase power thus developed, and water, at rates which would repay to the state the principal, interest, and operation and maintenance charges in fifty years.

Issuance and sale of state bonds to the extent of the funds required for such undertakings, and the use of such funds for construction work, are permitted in the act. The ultimate state credit is limited to $500,000,000. No burdens of either interest or principal are to be assumed by the state, except as the discharge of these obligations is assured from earnings of reclaimed water or power.

Other features of the proposed act include state assistance for political subdivisions in obtaining their own distributing systems and limiting of bond interest rates to 6 per cent.

This is frankly a step in the direction of municipal versus private ownership. With the present immediate need for power for western development, it seems a poor time to endanger the great power program already undertaken by the public service industry of this coast. The credit of the state of California is at the present time overburdened with the extravagant expenditures voted by each successive legislature. Why undertake a further enterprise against which there are so many sound economic objections to be urged?

Speakers' Bureau Organized in West

Cooperative Campaign Announces Adoption of Liberty Loan Idea by Western Electrical Men to Support Power Securities

One of the most potent influences of war days in putting over Liberty Loan Campaigns, food saving drives and other wartime activities was the organization of speakers which was ready at a moment's notice to carry the desired story directly to the people in all parts of the country. In order that the true status of hydroelectric development and hydroelectric financing and its effect upon the future industrial and agricultural growth of the West may be better understood, active steps have been taken to form what will be known as "The Speakers' Bureau," according to a recent report of the California Electrical Cooperative Campaign.

A skeleton synopsis of the hydroelectric story has been sent to about seventy electrical men in different parts of California with references to published articles and compiled data, requesting that they prepare a two to three thousand word lecture to be delivered when called for.

It is proposed, in carrying out this plan, to furnish speakers who will present this subject at every opportunity to the end that people of the state shall fully realize the imperative necessity for going ahead with this work.

Meetings will be arranged and speakers assigned as soon as those chosen for the Speakers' Bureau have qualified.

In that it is a measure in the interests of the upbuilding of the West, the plea for support of the great power program outlined by the western public service industry has much of the appeal of the Lib-

erty Loan campaigns. What we learned during the war, was the value of publicity in a good cause. We are just learning to apply these lessons in the solution of industrial as well as civil problems.

Western Power Program Endorsed

Eastern Engineer-Manager Expresses Belief in the Brilliant Future Ahead for Western Hydroelectric Development

George O. Muhlfeld, a member of the firm of Stone & Webster, of Boston, Mass., is a recent Pacific Coast visitor. Mr. Muhlfeld has spent the last four weeks in visiting practically all of the larger hydroelectric developments of the West and has talked with many of the leaders in hydroelectric development in this section of the country. In speaking to a representative of the Journal of Electricity and Western Industry, Mr. Muhlfeld had the following to say:

"I have been immensely interested in visiting the various hydroelectric plants of the West during the past several weeks, and from my talk with executive managers, engineers and financiers of this region I have come to the firm conviction that the West in its hydroelectric program has before it a brilliant future. I like your spirit of optimism. Every time I come out here it does me good and I see in such immediate developments as the Colorado River project of the Southern California Edison Company, the Pit River development of the Pacific Gas & Electric Company, the Feather River development of the Great Western Power Company, and the great development on the San Joaquin River, both by the San Joaquin Light & Power Corporation and the Southern California Edison Company, combined with the future plans formulated for hydroelectric development in Oregon,. Washington, Montana and Utah, a future vision of service in the upbuilding of industry in the West that can hardly be pictured in words. The people of your great West have confidence in the future—a future that spells present activity and growth and prosperity for the immediate months ahead. All this promises continuous service, cheap power, ever increasing population, industry and ample finance to build up here in the West the extensive agricultural, industrial and manufacturing program you have in view."

Mr. Muhlfeld has been associated on many of the great hydroelectric installations of the West and his company has designed and constructed such well known western hydroelectric plants as the Caribou Plant of the Great Western Power Company, the Big Creek development of the Southern California Edison Company, the White River development of the Puget Sound Light & Power Company, and many of the other noted hydroelectric installations. During the war period Mr. Muhlfeld was himself a notable figure in the work at Hog Island, where the United States Shipping Board undertook the development of the largest single shipbuilding plant ever attempted.

Abrogation of Contracts Questioned

Decision of Utah Utility Commission on Special Contract Cases Appealed to United States Supreme Court

An appeal to the United States Supreme Court has been taken by some of the customers involved in the "special contract" case, wherein the public utilities commission of Utah decided some time ago that a number of the special contracts of large power customers of the Utah Power & Light company were discriminatory, and ordered same placed on standard schedules.

The appeal is taken to obtain final decision as to the right of the public utilities commission of Utah, under the law of Utah and the federal constitution, to change the rates fixed in the contracts, the contention of the appellants being that the contracts were signed before the utilities act of the state went into effect, and that the commission had no power to alter such contracts.

The commission assumed the power to change the rates in contracts after a long hearing, and ordered the consumers to pay on the standard schedule basis. This decision was sustained by the Supreme Court of Utah.

This is merely another angle of the question of the right of commissions to abrogate contracts. Western utility commissions have from the first contended that such action lay within their powers and have from time to time been sustained by the courts of their respective states. Undoubtedly there are specific instances in which individuals must feel that injustice has been worked by such a setting aside of long time contracts made previously to the inauguration of commission regulation, and in the course of human fallibility possibly such injustices occur, but it is obvious that if commission regulation is to be of service at all in distributing the burden of expense equitably, it must have jurisdiction over all customers of the power companies. The very act of regulation is a limitation of the rights of contract.

Of course, it is essential that all respective utility commissions should be of such calibre as to deserve the confidence of all parties whose interests are involved. We have entrusted these great powers in the assurance that they will be equitably used—and up to the present time the results in the main have justified this trust. There is no progressive thinker today who would go back to the old conditions of competition.

Washington Shows Industrial Growth

Manufacturers' Association Report Indicates Wealth Added to Community Through Electrified Factories

The growing importance of the West from an industrial standpoint is indicated by the statistics recently compiled by the Manufacturers' Association of Washington. Washington ranks second in importance among Western states in the number of factories it supports and the value of their output, California taking first place. According to these figures, Washington factories added $366,433,000 to the wealth of that state during 1919. There were 4,919 factories in Washington, and during the year, they manufactured products valued at $809,635,000, this valuation representing their selling value or price at the plants, as actually turned out by the factories during the census year, and is not neces-

sarily the gross sale value of these products. During the year mentioned, there were 150,482 persons engaged in the factories and the payroll for the year amounted to $225,757,000. The enormous amount of energy involved in carrying on these manufacturing enterprises may be gathered from the fact that 587,702 hp. was daily engaged by the factories in carrying on their activities.

Improved Business Means Utility Sales

President of Jobbing House Sees Bright Future Ahead for Western Utility Securities in East

T. E. Bibbins, president of the Pacific States Electric Company, who has just returned from an extended trip through the East where he has called at many eastern business centers, reports brighter prospects ahead for the fall. Mr. Bibbins looks for adequate support of the western power program in coming months. He writes to the Journal of Electricity and Western Industry:

> The paramount thought which I have brought home is a well defined optimism as to our ultimate future coupled with the necessity for economy in our present period. The East undoubtedly has suffered greatly but is coming through the test in fine shape. Those who are in close touch with the situation seem to feel that this Fall and probably next year will show recovery, but at a very slow and conservative rate. While the West is feeling a depression there is every promise that we will not experience the same depth that is now being experienced in eastern circles. There is abundant evidence that prime public utility securities will find a ready market at considerably smaller cost in interest than heretofore, and to my mind this is the most hopeful sign of all.

Business Paper Features Electricity

Chamber of Commerce Publication Attributes Great Industrial Progress of Northern California to Electric Power Facilities

In the leading article of its issue of July 29, San Francisco Business, weekly publication of the San Francisco Chamber of Commerce, reviews the important part played by the electrical industry in the development of Northern California. That industrial progress and electrical progress are inseparable is the keynote of the article which is contributed by Robert L. Eltringham, Manager of the California Electrical Cooperative Campaign, and indicates the growing spirit of cooperative effort between the electrical and industrial interests. The author says in part:

> A growing number of industries in San Francisco are wholly dependent upon electrical current for their existence.
>
> The growth of the electrical industry is a standing invitation to large industrial plants to locate here. Eastern factories are expanding, but not on their own sites. The coal situation is far too acute to encourage Eastern plants to expand. Instead they are seeking new locations in districts where the modern substitute for coal, electricity, can be assured in quantities to meet their requirements.

Numbers of California industries have been electrified, to a greater or lesser degree, for many years, but it is only recently, with the augmented industrial activity of the West, that there has come any clear realization of the community of interest between those who develop the power and those who use it. It is a healthy sign, and one which promises much for western individual progress, when Chambers of Commerce and other organizations devoted to promotion work, lay special stress upon the major importance of electrical development.

Letters to the Editor

CHOOSING THE SALESMAN WITH RETAIL EXPERIENCE

To the Editor:

Sir: In addressing a group of jobbers recently, I was stressing the importance of the present day necessity for jobbers' salesmen to be real merchandisers. In illustrating my point I told them that from my own observation, the reason why the hardware jobber's salesman is selling more heating appliances today than the electrical jobber's salesman is because of the fact that the majority of hardware salesmen are recruited from the ranks of the hardware retail clerks, whereas the electrical jobber's salesman usually gets his training in a wholesale house. This point seemed to create quite some comment, and while some agreed with me, there were others who did not, but it set a lot of them thinking.

As you know, the average hardware salesman works a small territory and works it so intensively that he could take off his coat and handle the business over the counter for almost any one of his customers, whereas the mere suggestion of having an electrical jobber salesman do that for his electrical customers is not to be thought of. I maintain that the training which a man gets in a retail store is really a necessity if that man is to become a first-class jobber's salesman.

In building up the electrical industry, I am wondering if the electrical jobbers feel that it is necessary for them to recruit their salesmen from retail stores. To my mind in these days when only first-class merchandising ideas are making sales, the man without the retail experience is sadly handicapped, and that is why the hardware salesman is making a better job of it today than the electrical salesman.

B. E. ROWLEY,
District Sales Manager.
Edison Electric Appliance Co., Inc.
Salt Lake City.

TO "DIP THE LIGHTS" A SERIOUS MISTAKE

To the Editor:

Sir: In regard to the movement on foot to have all power companies "dip the lights" at eight o'clock each evening, I think any attempt to put such a practice into effect would be a very serious mistake for many reasons.

In the first place it is the endeavor of every operating company to give as near 100% service, both as to continuity and voltage, as is possible and large sums of money are being spent in improving plant facilities to accomplish this result. Any deliberate

disturbance of the voltage even for the proposed purpose would in my judgment meet with the almost universal disapproval of consumers.

From the viewpoint of the lighting consumer the hour selected could not be at a more inopportune time but the most serious objection would come from the power users and particularly those operating synchronous or induction motors equipped with low voltage cutouts where an appreciable lowering of the voltage would cause the motors to shut down.

The far reaching effect of this will be appreciated when you consider that practically all irrigation and reclamation pumping plants, as well as many industrial plants, are operated without constant attendance and the delay and expense of getting them started again would be very objectionable.

From an operating standpoint I see no serious practical difficulties that could not be overcome, although on a large net-work of lines supplied with power from a number of different sources the supplying stations would have to act simultaneously in lowering the voltage in order that the desired result might be accomplished with a minimum disturbance due to the drop.

Stated briefly I think the scheme is an undesirable one from every viewpoint and would not long be tolerated by the general public.

P. M. DOWNING,
Vice President in charge of Electrical Construction and Operation.
Pacific Gas & Electric Company, San Francisco

OIL SUPPLY NOT NEARING EXHAUSTION

To the Editor:

Sir: The Journal of Electricity and Western Industry published the following statement in its issue of June 15th:

"With oil production in California at its maximum and predictions varying from ten to twenty years as to the period before its exhaustion, California is already using more oil than it produces."

This would seem to imply that the oil production of this state has reached its peak and consequently, due to the increased demand for oil, the supply will eventually be exhausted in ten to twenty years. We cannot agree with this conclusion owing to the fact that at the present time, California is producing more oil than ever before in its history. The daily production for May ran about 337,000 barrels, and it is expected that this year's production of oil will will amount to 120,000,000 barrels compared with about 105,000,000 barrels in 1920.

By reviewing statistics covering the oil production in this state since its early discovery, it is to be noted that whereas in 1876 the production of oil was 12,000 barrels, it has steadily increased until in 1920 it reached a total of 105,700,000 barrels. This increase has been steady each year with the exception of the years 1889 to 1893, inclusive, when the production fell off due to decreased output in Newhall and Ventura counties, but in 1894 the Los Angeles and Salt Lake fields were brought in and about 1900 the Kern River, McKittrick and Big Midway fields started producing oil, so that the output increased rapidly, gaining each year with the exception of the year 1906, when the production fell 2,000,000 barrels, and finally reached 103,600,000 in 1914. In 1915 to 1917, inclusive, the production fell under 100,000,000 barrels, but in 1918 it again reached over 100,000,000 barrels and has been increasing up to the present writing.

The increased production this year is due to the establishment of two new proven fields, namely, Elk Hills and Huntington Beach, and just recently it looks as though Signal Hill in the Los Angeles district will open up a new territory.

We do not think that you can safely make predictions covering the length of supply of oil by simply taking figures published at present concerning the available quantity in reserve in the ground and dividing the present yearly consumption. One very important factor concerning the production of oil is that of the economic question of supply and demand which, of course, regulates the price of oil, and when the demand is great and the price accordingly high, there is considerable incentive to prospect for oil in new fields, and it is this fact which has helped as much as any other in increasing the production of oil in this state as well as in this country in general. When the demand drops off and the price falls, as at present, naturally considerable wildcatting and prospecting is going to be curtailed, as well as production from proven fields, in order to protect the industry and maintain a price at which it is profitable to produce oil.

Just at present, especially through the midcontinent district, various plans have been made covering the curtailment of oil production, as the price there, as well as in Texas, is now about one-third at the wells what it was at the beginning of the year, but in spite of these various plans, the production has fallen off very little. We think it safe to say that, had the demand for oil continued so that the price could have been maintained, the production in this country today would be considerably more than it is at the present time.

Another consideration which will have a bearing on the prevention of the exhaustion of the oil resources of this state is the campaign now on by the public utilities companies of this state in the development of hydroelectric power and the substitution of this form of power for that generated by steam, consequently releasing oil now consumed in generating power for other industries in order to keep up with the demand.

In stating the case for California oil, we do not wish you to infer that we are in any way opposed to the development of hydroelectric power in this state, and we think it safe to say that the oil industry in general welcomes the continuance of this work, but we do think it rather unfair to imply that the oil industry of this state is going to cease in any length of time like ten to twenty years.

S. T. CARR,
Sales Manager.
Petroleum Rectifying Company of California,
San Francisco.

Builders of the West

ROBERT I. BENTLEY

CHARLES H. BENTLEY

President and general manager respectively of the California Packing Corporation, whose constructive work has done much to raise the standards and extend the markets of the canning and dried fruit industry and to develop the world-wide field in which western products have now become familiar.

THE origin of the canning industry dates back to the days of Napoleon when that general offered a prize to anyone who could invent a way of preserving food to supply his army on their long marches. A French chef chanced on the secret of hermetically sealing containers and thus laid the foundation for the present fruit industry of the West. A little later the American civil war raised a similar demand for preserved food and the canning industry west of the Rockies actually started.

Following its warlike origins, the next important event which should be chronicled in the history of fruit canning is the birth of the Bentley brothers, Robert and Charles, in San Jose, California. With single-minded unanimity they proceeded to devote themselves to the canning industry and have followed that interest from their earliest years to the present time. During school days they spent their vacations in the canneries located in the fruitful Santa Clara Valley—and even when R. I. was attending the College of the Pacific, while Charles took his honors with the famous class of '91 at the University of California, they used to get together during the summers for a little canning experience. By the time Charles was through school, they were thoroughly familiar with the problems of preserving, and their first step was to take over a fruit business in Sacramento under the name of the Sacramento Packing Company. With R. I. Bentley as general manager and C. H. Bentley as sales manager, the business was soon prospering and branches were established throughout the state. Pioneer work was done in introducing California canned and dried fruits in foreign countries.

The Bentleys have always stood for cooperation with the other forces in the industry and in consequence when the California Fruit Canners' Association was formed in 1899, it was natural to find them in the forefront of the amalgamation. The two brothers came to San Francisco at this time, R. I. as general manager and C. H. as sales manager of the new concern.

The same principle of merging forces was carried out again in 1916, when four of the best known packing and canning companies in the state joined together to form the California Packing Corporation. The Bentley brothers again were asked to take the positions of general manager and sales manager respectively, and it has been under their direction that this organization has made its great success. R. I. Bentley has recently become president of the company.

The California Packing Corporation now stands as the largest company of its kind in the world. It includes almost everything in the line of preserved food among its output, with the exception of milk and meats. From the fruits and vegetables of California, it has spread to the pineapple of Hawaii and the salmon of Alaska. With the addition of dried fruits and the inclusion of many brands and grades among its products, it has introduced a great flexibility into the canning business, so that full advantage may be taken of whatever crop offers. The California Packing Corporation was one of the first of western firms to enter the field of national advertising and its effective color pages have done much to popularize California fruits in eastern markets. Not less important in building up western standards has been its contribution toward square dealing and the maintenance of a high quality. The principle of amalgamation for which it has stood has given the company a stability which has placed it on a higher standard of production than can always be maintained by smaller concerns.

Since the days when he served on the University of California football team and was elected to the Phi Beta Kappa and whatever other honor societies the college afforded at that time, Charles H. Bentley has taken an active part in the civic welfare of his community. At one time he served somewhat against his will but in the interests of good government, as a member of the Board of Trustees of Sacramento. He was a member of the original Board of Governors of the Commonwealth Club. At the time of the earthquake and fire in San Francisco it was he who took the prompt action toward securing an investigation of fire insurance settlements which undoubtedly saved from fifteen to twenty millions to the stricken property owners of that city. Shortly following the rehabilitation of the city, he served as president of the San Francisco Chamber of Commerce. Since 1907, he has served as a trustee of the San Francisco public library. In 1917 he went to Washington as Advisor on Canned Goods to the Committee on Supply of the Council of National Defense. Later he served on the Executive Staff of the Food Administration and represented the Food Administration on the War Industries Board.

To R. I. Bentley and to his brother, Charles H. Bentley, for their contribution toward the upbuilding of the West through the avenues of public service and through their constructive work in forwarding the western canning industry, this issue of the Journal of Electricity and Western Industry is affectionately dedicated.

Growing Western Food Industries Demand Foreign Markets

An Analysis of the General Market Situation Which Is Now Confronting the Western Food Products Business With a Discussion of Its International Aspects

BY HILMER OEHLMANN
H. M. Newhall & Company

During the war the demand for preserved foodstuffs increased tremendously, and especially after the United States entered the struggle and embarked upon its project of training millions of men for military service did it appear impossible for the canners to produce sufficiently large supplies of preserved fruits, vegetables, salmon, and other goods to supply the needs of these armies. Great quantities of canned goods were shipped to France and to other countries where American and allied troops were operating.

Factors of Temporary Depression

Then came the end of the war, and with the demobilization of the armies in Europe the enormous stocks of provisions carried from America for their use were thrown upon the various markets for civilian consumption. In this manner a great many communities were made familiar with preserved foods which were hitherto practically unknown to them. However, in consequence of the severe industrial depression which followed the war, the standard of living in most countries declined too much to permit the continued consumption of these goods, many of which were regarded as luxuries. In fact, some of the countries which had imported substantial quantities of canned fruits from California in former years placed these upon their luxury lists and enacted laws prohibiting their importation. Germany is the most important of our buyers which passed such a measure, and in Norway and Italy also the prohibition is still effective.

The markets of the Orient are growing in importance in their consumption of western food products. Five hundred million dollars in foreign trade was handled over the Seattle dock here shown during 1919. The stacked cases contain vegetable oils from the Orient, which are among the products sent in exchange for western canned goods and dried fruits.

The greatly enhanced value of the dollar in terms of the currencies of practically all other countries of the world is also a factor of tremendous importance in the curtailment of purchases, especially of non-essentials, such as canned fruits. Prices which had risen to unheard of figures in consequence of the great demand and high cost of production brought about by the war became prohibitive to the civilian populations after the conflict was brought to a conclusion. Even after the price decline was well under way here, the high exchange rates still kept foreign countries from buying and this condition is contributing largely to the present inactivity.

Home Competition to Be Met

The circumstances set forth above may be considered as of temporary duration, but there is a new factor which is regarded by exporters of California canned fruits with growing concern. This is the development of fruit canning industries in other countries of the world. It is true that California has great natural advantages for the growing of certain fruits and has thus far enjoyed a practical monopoly in the canning of these. But prices of western fruit, which are already high enough, must be increased in foreign markets by the amount of a substantial import duty which gives an advantage to locally canned fruits. Furthermore, there is no great difference in the quality, as the technical processes of manufacture in Spain and other countries has undergone great improvement. Switzerland, formerly a buyer of California fruits, is developing a considerable fruit canning industry, and in spite of the limited producing area, has been able to export small quantities to various other countries. Australia, for some time a large manufacturer of jams, most of which were destined for the United Kingdom, is now selling large quantities right here in California and is commencing also to export canned fruits. Certain sections of Argentina which have passed through the successive stages of herding and extensive agriculture, are now busying themselves with fruit culture, and canning is already being done in a small way. It is readily conceivable that the possibilities in that country are very great indeed.

The Local Canning Situation

The local canning situation has much to do with present market conditions; 1919 and 1920 were years of unprecedented activity in the industry. During the previous two or three years there has been enormous increases of plant and equipment, and many new enterprises were launched, some of which paid for their construction with a single season's pack, so great was the demand for their prod-

ucts. At the beginning of the canning season in 1920 there were still considerable quantities of 1919 fruits which had not moved into channels of consumption, but the bulk of the pack was at least in second hands and the tide of business prosperity was still rising, and, consequently, the canneries operated during 1920 at full capacity. The cost of sugar and fruit was higher than ever before, and wages had increased in proportion. It was considered necessary and justifiable then to name higher prices for canned fruits than had prevailed in 1919.

During the summer of 1920 the period of prosperity and rising prices culminated, the decline set in, and the pack of fruits did not move as anticipated. The demand from foreign countries had fallen off almost entirely, and by the end of the year business was practically stagnant, and there was little interest shown, no matter at what price goods might be available. After the first of the year some activity was again felt, but prices had sunk 35 per cent to 60 per cent below the opening figures and it was between these limits that most of the pack actually moved into consumption. Part of the carry-over from the 1919 pack was sold at even lower prices.

Troubles of the Present Season

This left the canners and canned fruit dealers in a very unfavorable position, and during the present year there have been a number of failures and reorganization processes among important producers and factors in the industry. In other seasons when there was a large booking of future orders, canners could approach their bankers on the strength of these and secure the necessary funds to finance their packing operations. This year, however, is one in which purchases are only being made in accordance with current requirements and the canners are finding it difficult to secure advances on their pack. This circumstance, together with the very absence of a volume of orders warranting full operation, and the withdrawal of a number of producers will make for a greatly restricted pack of fruits.

Vegetables Absorbed by Domestic Markets

Our vegetable canning industries are in general subject to somewhat different conditions. Asparagus, particularly, is a commodity for which the demand has usually greatly exceeded the supply, as the producing area is very limited. It is true that there was a considerable carry-over of certain grades from the 1919 pack, but the domestic market is more than able to absorb all that can be produced, and the existence of such stocks at the end of the season was due wholly to the reluctance of the holders to reduce their prices to conform with the trend of the market. Lack of future orders when opening prices were named this spring carried a very light pack, and buying has meanwhile been sufficiently heavy to warrant several advances in list prices.

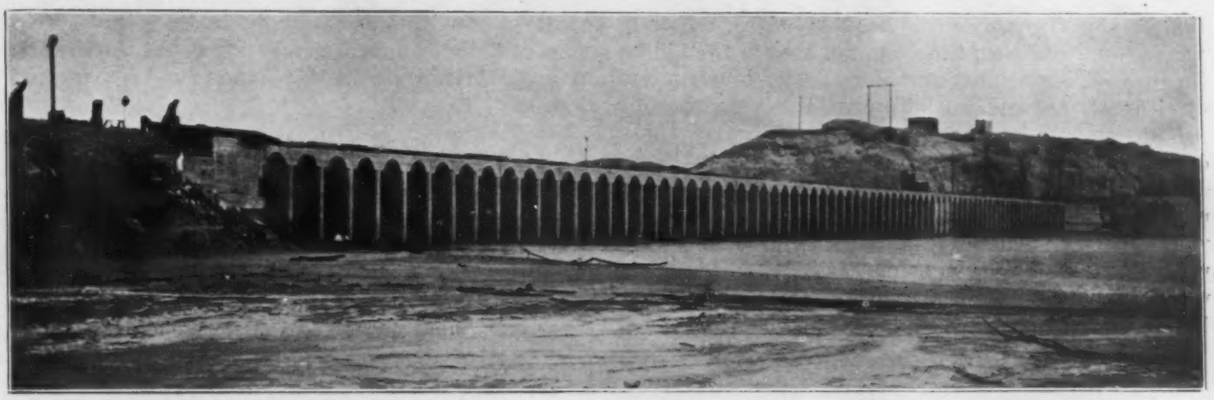
The pack of spinach was small and most of it disposed of very shortly after the packing season. Tomatoes, peas, string beans and other vegetables commonly canned are grown also in many other sections of the United States, and the quantities packed on the Pacific Coast ordinarily go into local consumption, although there is a movement between the various parts of the country, depending upon the respective quantities produced by the sections to which the industries are limited.

The Future for Western Canned Goods

In view of the several circumstances mentioned above, it is difficult to make an accurate prediction of the future of our canned goods industry. A careful consideration of their respective importance, however, would probably justify the belief that our comparative advantage in the production of certain varieties of goods for canning and our expertness in the technical processes of preparing them will enable us to continue as a very important, probably the most important, supplier of these. While it may be some time before the output of war days is again attained and absorbed at prices leaving a fair margin to the producer, the very restriction of production which is rendered inevitable for the reasons set forth, will bring the industry back most rapidly to a healthy state. It is reasonable to expect also that the coming years will bring the exchanges of foreign countries again into a more favorable relation with our own currency and thereby increase their ability to buy our goods. Finally, the standard of living will continue to advance in this country and abroad, when regarded over a long period, to an extent which ultimately will bring about consumption of our own canned goods as well as those of any competitors we may then have. It is well to remember that the consuming powers of the vast populations of the Far East will be exploited as the development of the resources of their countries progresses.

Foreign Markets Needed for Dried Fruits

The dried fruit industry is far more dependent upon the export market than that of canned goods. Enormous quantities of prunes, dried apricots, peaches, apples and pears have been shipped to the markets of western Europe and to some extent to many other countries of the world. But just as our successful development of the fruit drying industry is dependent upon Europe, so Europe is dependent upon the Pacific Coast for its supplies of fruits which cannot be successfully dried to any great extent in other countries. The Balkan States furnish some prunes, but the quantities are not nearly sufficient to supply the demand. The warm dry climate in our fruit growing regions during the summer months makes the Pacific Coast of our country an ideal section for the proper preparation of dried fruits, and as these are not luxuries, at least to the extent that this is true of canned fruits, the depression of the market has been relatively short-lived, and Europe is again actively inquiring for California fruits. Apples are not ordinarily sun-dried, but are prepared in artificial dehydrators, and as New York also dries considerable quantities of apples in this manner each year, we have competition from that source for the European business. On the whole, it may be said that the prospects for continued prosperity of our dried fruit industry are very good.



Rockwood Gate at the head of Imperial Canal, part of the tremendous works which are being maintained by the Imperial Irrigation District to protect their interests from flood and to provide the necessary water for irrigation. Evaporation and silt problems must be carefully studied before any development is carried out on the upper river, in order that nothing be permitted to obstruct the normal flow at low water stage.

Solving the Complex Problem of the Lower Colorado River

The Need for a Unified Handling of Irrigation, Flood Control and Power Questions on the Colorado in Order to Secure Maximum Benefit to Southwestern Development

BY C. E. GRUNSKY
Consulting Engineer, San Francisco

The extension of irrigation with the waters of Colorado River, particularly in Imperial and Coachella Valleys, California, which has received serious consideration during the last few years, involves regulation of the stream flow by storage. The Colorado River annually delivers into the Gulf of California a great volume of flood water, which is not alone waste water but which at the height of the spring floods becomes an annual serious menace to the entire developed area on the lower river both in the United States and in Mexico.

This year's menace, more serious than usual, has just been safely passed. The levees have held, though with so slight a margin that for a time hope of holding them was almost abandoned. The situation in the matter of securing adequate protection against flood water is particularly bad for a number of reasons, not the least among which is the fact that the battle against the flood water which threatens the Imperial Valley must be fought in Mexico.

The levee which forces the Colorado to flow south from the Volcano Lake region in Mexico instead of flowing north into Salton Basin, California, is known as the Volcano Lake levee. The principal section of this levee extending easterly from Cerro Prieto, an outlying volcanic spur of the Cocopah range of mountains, has been built up in successive stages to a height of about 14 ft. It has a broad crest carrying a railroad track and has a rock faced water slope. Before 1908 no levee was here required. A small portion only of the flood flow of the Colorado then reached Volcano Lake and the natural ground north of the lake was not overtopped by flood waters. But in 1909 the river changed its course. It left its old bed just south of the south line of Arizona, breaking its westerly bank and taking a westerly course toward and into Volcano Lake. The river at its high stages has ever since been submerging large areas in the vicinity of the lake and has practically obliterated the original lake by silt deposits. The river carries enough silt to cover in a year about 150 square miles of territory one foot deep.

An International Problem

Since 1909, this river silt has to a large extent been dropped by the river water in the Volcano Lake region. Into this same region much driftwood and rubbish are delivered during the river's annual high stages and the general flooding which takes place in the spring and early summer has stimulated a naturally vigorous plant growth. The silt and drift barriers and rank growth of weeds, willows and grass have combined to check the escape of water from the Volcano Lake region, with the inevitable effect of forcing the waters in this region to annually higher levels. The flood plane is rising at the rate of about one foot per annum. It has been necessary to keep pace with this rise in the matter of levee building. And so it happens that the most directly interested organization, the Imperial Valley District, through the agency of a subsidiary Mexican corporation, is forced to do a large amount of protection work in foreign country. About $6,000,000, of which the United States contributed $1,000,000, has already been expended in Mexico to safeguard and protect lands and other property in the United States.

Storage Dams First Step

What is needed, of course, is flood control under the cooperation of the United States and Mexico. But a first step in this direction will have been taken when either the dam at Lee's Ferry above the Grand Canyon is constructed by the Southern California Edison Company, or when the United States builds

the Boulder Canyon dam to provide better irrigation service and to extend the irrigated area in the Salton Basin, California, and elsewhere. The construction of either of these dams will make the generation of a large amount of power possible. Either of these dams, whose height of 500 ft. or more will constitute a record, would create enough storage space to hold more water than the lower river carries in a normal year. The construction of either one of them would provide means for cutting down the peak of floods while supplementing the natural low water flow of the river from storage.

Proposed Developments

The Boulder Canyon dam, located below the Grand Canyon, is proposed as a feature of a project —the investigation of which was authorized by Congress—under which some 300,000 to 400,000 acres of land not now irrigable in the Imperial and Coachella Valleys would be brought under control. The cost of constructing it would be distributed to the lands which are to be served with water from storage and to Los Angeles, San Diego and other cities of the Southwest which are desirous of sharing in the power output.

The Lee's Ferry dam, in a location above the Grand Canyon, is to be constructed—if the necessary permission is granted by the Federal Water Power Commission—under more or less cooperation of the electric power companies of the Southwest, and a storage capacity of 40,000,000 acre-feet is talked about as a possibility. Data are not at hand which would enable accurate estimates to be made of water storages and power output and economical features by such reservoirs nor even, with any great degree of precision, of the depletion of the river's aggregate annual water output that would result from evaporation losses. It appears that careful consideration will have to be given to these losses, as also to the rate at which any reservoir constructed on the main Colorado river will trap the river silt.

Safeguarding All Interests

If a permit is granted for the Lee's Ferry dam, this will undoubtedly be coupled with such conditions as will protect in reasonable measure the more or less conflicting requirements of those who wish to use the stored water for power, of those who wish to have the water released when it will do the most good to the farmer, and of those who need protection against floods. At any rate, under the Water Power Act all rights granted will be subject to recapture by the United States at some future time and modification of terms then becomes possible. Likewise if the Boulder Canyon dam is built by the United States for a group of districts or for a number of districts and cities, there will no doubt be conditions of use prescribed, or control reserved, such that the greatest good to the greatest number will result from the utilization of the reservoir space.

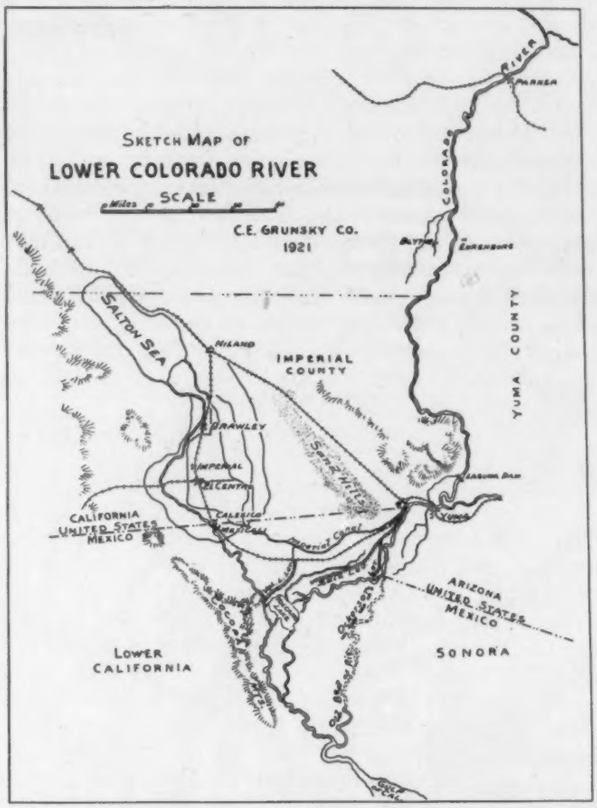
Any regulation of the flow of Colorado River by storage can be made of benefit to Mexico as well as to the United States. Before any large storage project is carried out there should, therefore, be proper cooperation with Mexico sought in order that Mexico may contribute in reasonable proportion to the cost of any works which are planned to be of mutual benefit.

Storage a Necessary Factor

In reporting to the Secretary of the Interior on the problem of the Lower Colorado River, in 1907, the writer expressed the following view as to the necessity of providing storage:

"Storage is essential for the regulation of the river's flow to meet the needs of the land, to make the surplus of the spring months available in summer and autumn. Consequently storage of the river's flood waters must be made a feature of every general Colorado river project. Storage to a considerable extent is feasible, moreover, as it is known that large reservoir sites exist on some of the tributaries of the main river, and a combination storage and silt trapping reservoir at some point below the Grand Canyon is not out of the range of possibilities."

"It may be assumed as one project after another is carried to successful completion by private enterprise or under government aid and supervision, that the shortage of water will in the course of time, at certain seasons, become a matter of moment and will be made a matter for joint action by all parties at interest, or, possibly congressional approval might be secured of a comprehensive project for this river, which would at the outset include this storage feature."



The international aspects of the problem are clearly shown by a glance at the map. Most of the important levees and a large part of the irrigating canal is below the border and dependent on Mexican cooperation.

"In the consideration of an arrangement with Mexico it should, however, be made clear that the extension of irrigation in the United States will materially deplete the ordinary flow of the river below Yuma, and that ultimately, * * * the United States would be compelled at times to furnish to Mexico, some water from artificial storage basins to meet deficient river flow."

Solving Special Lighting Problems in the Modern Cannery

Illumination an Important Factor in Bettering Working Conditions Under Exacting Requirements of Night Work During Rush Season in Modern California Factory

BY WARREN ALDEN
Benjamin Electric Company

Proper illumination, either artificial or daylight as a factor in increasing production in the canning industry cannot be over-emphasized, as the grading and sorting of the various fruits that are canned throughout the year is of prime importance to the success of the business.

Due to the obvious fact that the operations of the canning industry are confined to comparatively short periods of the year, naturally it is necessary to provide good lighting equipment, so that if called on, the plant can operate day and night until the run of fruit coming in is exhausted.

The lighting arrangement throughout the entire plant should be so arranged that the intensity of illumination is practically uniform throughout, and shadows are reduced to a minimum. This is of vital importance to this sort of institution on account of the large number of women employed, as light has a very definite influence upon the working ability of the occupants of the room.

Daylight view. Bright and cheerful surroundings are essential in obtaining the best work from women employes.

Night conditions duplicate those of day. Units are carefully selected and spaced to avoid shadows at critical points

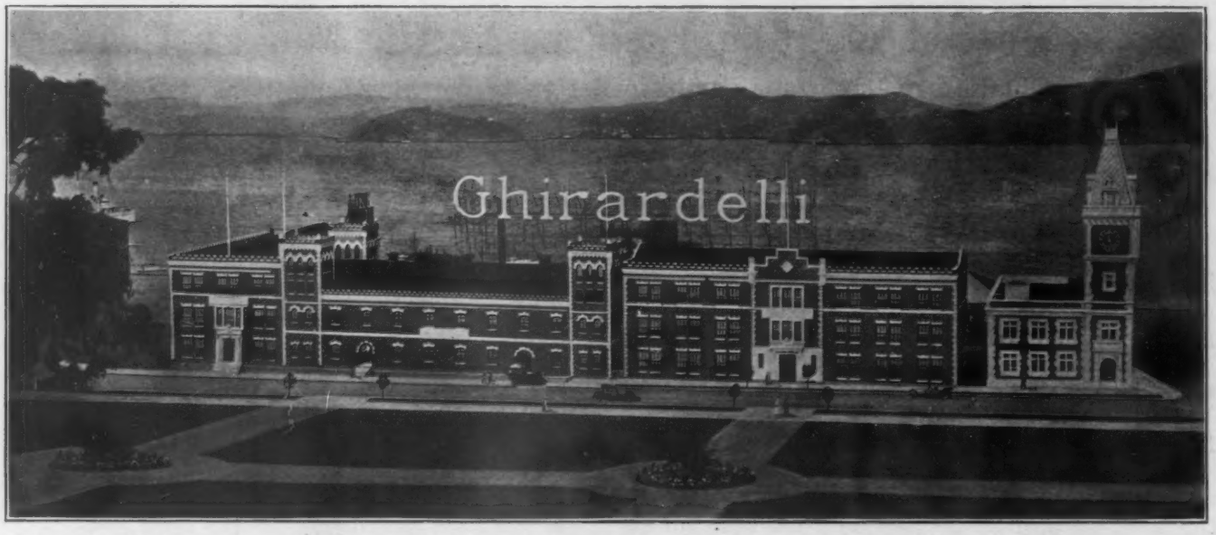
The modern plant of the Pratt-Low Preserving Company, located at Santa Clara, California, is an example of what can be done in this respect.

The plant is of the sawtooth style of roof construction, thereby obtaining the best of the daylight, and is equipped throughout with Benjamin R. L. M. one-piece reflectors, spaced 18 ft. apart and 14 ft. above the floor. These reflectors are equipped with 200-watt gas filled lamps, and produce a lighting effect which almost equals that of daylight, enabling the work to proceed equally as well at night as during the daylight hours. The lighting arrangement over the cutting tables has been given special care, so that no shadows are cast in front of the girls as they sit and cut and sort the fruit. The three lights over each table are controlled by the means of an indicating snap switch, located on an adjacent post. In addition to this, each set of six lights are grouped on one circuit in a panel board, and controlled by a switch located therein. This arrangement gives a very flexible control of the lighting needs.

The peaches go through several processes needing good lighting. They are cut in two, stone removed, and sorted into three or more grades by girls seated at long cutting tables. As mentioned before, special care has been taken to provide adequate illumination over this section of the building. The reflectors with 200-watt lamps give a very uniform and even distribution of the light flux.

The turn-over tables turn each peach over on flat side, and enable sharp-eyed women to examine each individual fruit for blemishes and imperfections as they slowly pass by. This is a place where very good lighting facilities are needed and are provided by means of three Benjamin R. L. M. reflectors, spaced on about 10 ft. centers, and equipped with 200-watt gas filled lamps, mounted 9 ft. above the tables.

The fruit is then transferred by means of moving belts to the graders, which automatically grade according to size. Each size, as it comes off the grader, is picked up and conveyed to the canning tables, and there carefully placed into the cans by highly trained women. This is one of the most important steps in the process of canning, and the lighting facilities are taken care of by means of Benjamin R. L. M. reflectors equally spaced throughout the entire area, and equipped with 200-watt gas filled lamps, mounted about 14 ft. above the floor. This eliminates shadows to a minimum, as the light at any one point is always coming from two or more sources. Extreme care is taken in the canning process to again resort the fruit into from five to six grades, so that the need of exceptionally good lighting is obvious. From here on the process is entirely automatic.



Typical of the clean and attractive factories which cheap electric power makes possible is the Ghirardelli chocolate plant in San Francisco. The great electric sign is visible at a great distance at night, and from almost any section of the city.

Electrical Service Aids a Leading Western Food Industry

How the Introduction of Electric Drive Has Improved Operating Conditions and Lowered Production Costs in Chocolate Manufacture Is Brought Out in Interview with Alfred Ghirardelli

The importance of the chocolate industry on the Pacific slope is indicated by the fact that of all the chocolate and cocoa consumed in this region, approximately 90% is manufactured locally. The industry is in a sense self-contained: enough is produced to meet the major demand of the entire western market, making eastern and foreign products non-essential, while at the same time the amount shipped east by western manufacturers, or exported to the Orient, is in most cases practically negligible.

There are seven manufacturers of chocolate in the West—one each in Seattle, Los Angeles and Salt Lake City, and four in San Francisco. Their combined output amounts to about 23,000,000 pounds of chocolate and cocoa annually, of which the D. Ghirardelli Company of San Francisco produces about 15,000,000 pounds, with a value for 1920 of $3,843,000.

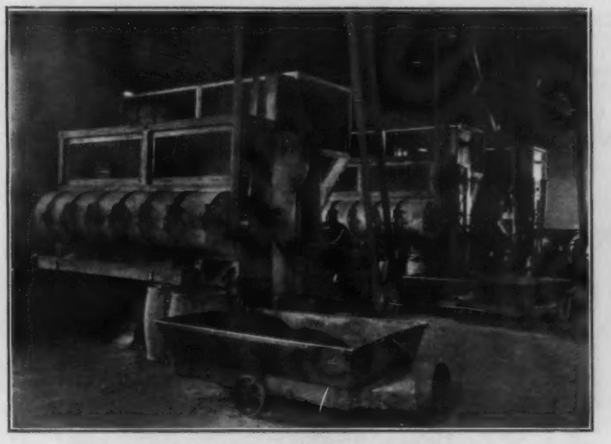
The output of the Ghirardelli plant has greatly increased since the installation of electric drive in 1902, and again since 1911 when various extensions and improvements were made in the electrical equipment. The total installation at present amounts to 820 hp., including one 40-hp. motor, two 35-hp., two 30-hp., six 20-hp., thirteen 15-hp., twenty-one 10-hp., nine 7½-hp., twelve 5-hp., two 3-hp., and three ½-hp.—seventy-one motors in all. These are a.c. motors operating at 220 volts on power supplied by the Great Western Power Company. The electrical consumption was 1,521,000 kw-hr. in 1920.

The change to electrical operation was made in the interests of economy, and the results have fully justified all expectations. This is largely due to the flexibility of the individual drive possible under the new system—a very important factor where the successive processes of manufacture involve a large number of different machines.

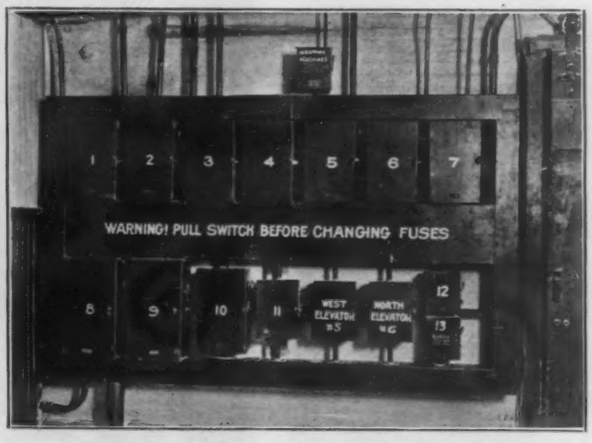
Two complete sets of machinery are kept in operation in two adjoining buildings, the one set turning out powdered chocolate, and the other the various kinds of cake chocolate—plain bars, nut bars, "favors," flicks, and so forth.

The cocoa beans, weighed and blended, are first put into oil-heated roasters which have an electrically operated revolving drum inside. After cooling on an exhaust fan, they pass through the crackers which remove the shells and crack the hot beans into small pieces, at the same time segregating the shells, which are later used as supplementary fuel in the boiler house. The next process is accomplished by the mills, of which there are twenty-one, with three pairs of circular stones modeled after the old-fashioned millstone. Here the beans are ground, the friction melting the butter fat and reducing the mass to a thin paste. These mills are driven in pairs by a 10-hp. motor. The paste is treated in hydraulic presses which press out a great part of the cocoa butter under a pressure of 6000 lb. to the square inch, leaving a round dry cake containing about 24% of cocoa butter.

On the floor below these cakes are pulverized and mixed with sugar, about half cocoa and half sugar for the sweet ground chocolate. This mixture is cooled and sifted and passed down to the next floor where electrically operated automatic weighing machines fill and weigh the cans and pass them on to be capped. For cocoa powder nothing is added, but the process is the same.



Machines in which the roasted cocoa beans are shelled and cracked before being crushed for making powdered chocolate.



The safety switchboard is one of the more recent of the electrical improvements. The wiring in the plant was put in conduit at the same time.

The process for the cake chocolate is somewhat different. The roasted and ground cocoa beans, containing all the butter fat, are mixed with sugar and then passed between steel rollers similar to those used in paint mills. Additional cocoa butter is added. In the case of milk chocolate, a certain quantity of sweetened milk is mixed with the chocolate. This mixture is put into a mixer called a melangeur, similar to a "Chili Mill," and agitated continuously at a fairly high temperature until it is thick, and partially dried out. It is then processed for twenty-four hours in heated vats with a rolling agitator, known as conges.

Still kept at a certain temperature, it is put into tin moulds of various shapes, the moulds being laid out on a shaking table which shakes the chocolate down thoroughly. The filled moulds pass on a conveyor into the refrigerator, emerging at the other side after about thirty minutes in the many familiar forms of eating chocolate.

The milk used in the manufacture is condensed on the premises in special vats under a vacuum. About 1800 gallons of fresh milk are used daily. Of the other raw materials, the sugar and nuts are both obtained in California, and the fact that California is the second largest sugar producing state in the Union is a distinct advantage to the western chocolate manufacturer. The sugar consumption in the Ghirardelli plant amounts to an average of 25,000 lb. daily, obtained mainly from the Salinas valley. The cocoa beans come from South America, principally Ecuador, and as San Francisco is the nearest port of call on the coastwise route, the western manufacturer is in a distinctly favorable position. The climate is one other factor which must be numbered among the West's advantages for this particular industry. Although the chocolate during its manufacture is kept steadily at a rather high temperature, regulated by means of thermostats, directly it has passed through the refrigerator and is ready for wrapping and packing, coolness is essential. Hot weather sweats the cakes and makes it impossible to wrap them; consequently it is frequently necessary for the eastern manufacturer to shut down during the summer months. In the West this loss of time and profit is not included in the plant's operating program, the working conditions being ideal throughout the year.

The roasters are oil heated, with electrically operated revolving elements belt driven by a single motor. The beans are blended before being roasted.

The steel and stone mills where the cocoa beans are crushed preparatory to having part of the cocoa butter extracted.

Mechanical Handling of Food During Manufacture

One of a Pictorial Series Featuring Interesting Applications of Electric Service, Advances in Home, Industrial and Power Construction and Noteworthy Developments in Western Progress

Sorting machines in a dehydrating plant. The fruit is automatically sorted according to sizes and passed along to a belt conveyor. The whole electrical mechanism in the process is controlled by one man.

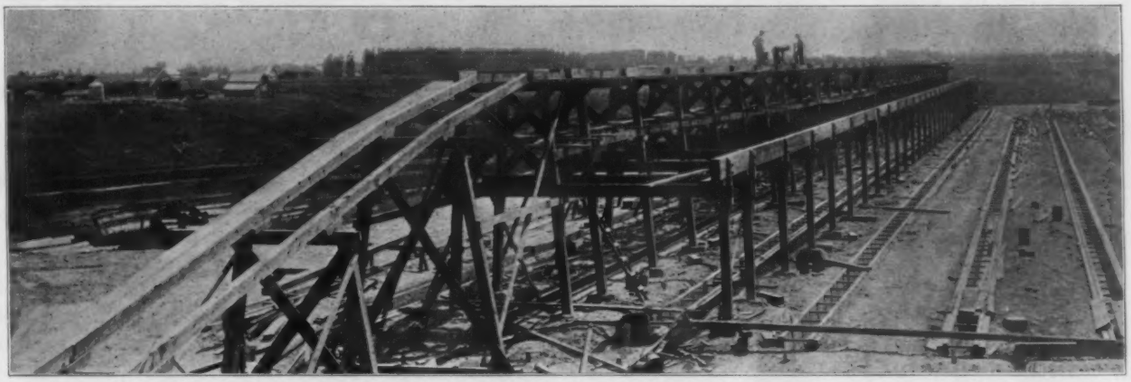
The electrically operated receiving station at the packing house of the Honora Realty Company, California. From the time the fruit is put on to this conveyor until it is packed, no hand touches it.

Preparing tomatoes for canning. Note the electrically operated conveyor which passes the pans before the workers. The canneries are among the most important users of electricity in the West, the number of motors in an average plant being about 25, and the power consumption about 90,343 kw-hr. annually. All the large canneries are completely electrified.

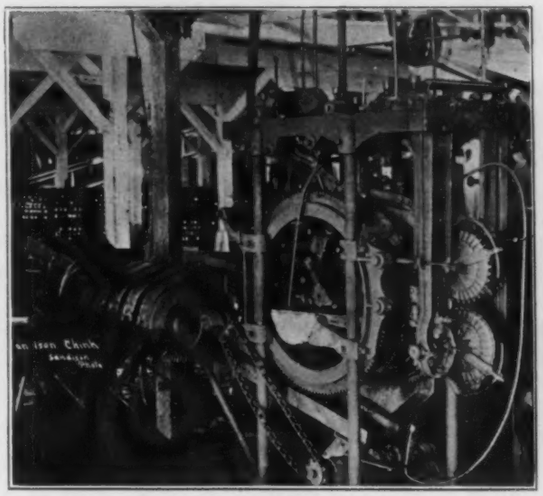
Long belt conveyors carry the boxes of fruit in this raisin packing plant from one end of the packing room to the other. Besides the great conveniences and cleanliness involved in electrical handling of a food product, packers and canners have found that operating conditions are greatly improved by the flexibility that the individual drive makes possible.

The electrically operated washing machine at the dehydrating plant in Atascadero, California, is only one of the many devices installed to eliminate human handling of the fruit, insuring perfect cleanliness.

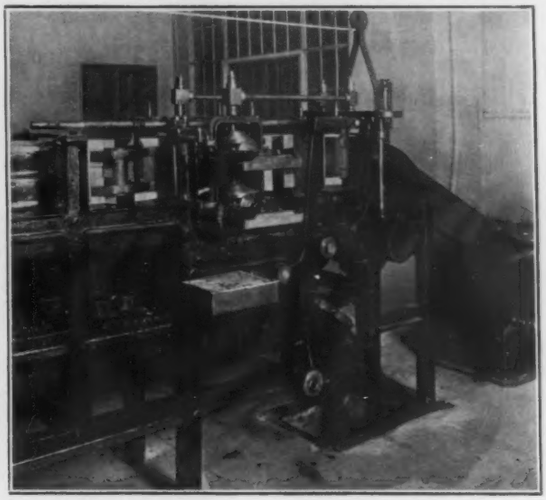
The Fresno plant of the California Associated Raisin Company uses electrically operated belt conveyors to transfer cartons from the packing tables to the floor below, where they are nailed up ready for shipment.



Beets used in the sugar beet industry of the Intermountain district are carried on this conveyor from the pits where they are dumped by the wagon, to a revolving screen. On the screen they are shaken free of dirt, dropped down a chute and carried on an elevated belt over the sheds to the bins which are to be filled.



"The Iron Chink," a machine used in the cannery of the Pacific American Fisheries at Bellingham, Wash., obviates the necessity for a tremendous amount of handling of the product. Formerly the salmon were butchered by Chinamen, but the machine performs the operation at the rate of sixty a minute, cutting off the heads, tails and fins, and removing the entrails.



In the Shredded Wheat Factory at Oakland, California, the most efficient and sanitary methods are employed both in handling the grain used in the cereal, and in packing the finished product. The wheat is cleaned in electrically driven machines and conveyed from one process to the next by special elevators terminating at the sealing machine shown in the picture.

Bread and Butter Business for the Active Electrical Dealer

Two Practical Suggestions Which Will Help to Pay Overhead, Reduce Cost of Making Sales and Increase Profits Through Taking Advantage of the Small Convenience

BY M. T. DOLMAN
Manager Sales Promotion Bureau, Pacific States Electric Company

I have been asked by contractor-dealers many times:

How can I increase my sales?
How can I reduce the cost of making a sale?
How can I increase my turn-over and lower my overhead?

My answer has always been:

Pay more attention to your bread and butter business.

By bread and butter business I mean the "little things" with which every electrical store is filled, or should be, and for which there is an unrecognized and unappreciated demand on the part of the public.

The Possibilities of the Front Door Bell

For fear of reducing the amount of battery business, for instance, dealers are sometimes loath to introduce bell-ringing transformers, not realizing that through their sale satisfied customers are made and good-will built up for both the dealer and for other electrical products.

Bell-ringing transformers, as manufactured today, are well-nigh trouble proof. Once installed, battery troubles for door bells are abandoned for all time. And the transformer will scarcely turn the meter, so operating cost is absolutely unnoticeable.

I don't know of any one thing manufactured today which will go so far toward selling the public on the idea of the practical and economical use of electric power as this one little article. Common sense should tell you that the real service it performs instills a confidence in the dealer which cannot be shaken and which means a ready acceptance of his statement that other electrical merchandise he recommends is worth while.

If I were a contractor-dealer I would dress a window with bell-ringing transformers at least once every five weeks, being careful to fully explain, on cards, its service features. I would keep a permanent counter display near my cash register. I would block out into districts the community which I was endeavoring to serve and systematically circularize those districts. I would make it obligatory for my salesmen and clerks to call this article to the attention of every customer who called at the store during the time I had the window dressed.

You people who have always wondered how the chain store has been able to grow to such proportions will here find your answer. "Concentrated salesmanship"—that's the answer. Making two sales grow where one grew before.

Saving a Fire and a Customer

Now another little article which is, to my way of thinking, one of the most useful, yet one of the least talked-of (by the dealer)—the cut-off switch which can be applied to the cord of any electrical appliance. Two such switches have trade names: one is the G-E Thru-Cord Switch, the other the 70-50 (Cutler-Hammer) switch.

Let's see how they come in to help reduce overhead, to increase turn-over, to say nothing of adding to net profits.

A woman calls at your store for the best known of all appliances—the electric iron. She wants a six-pound iron for use in her home. Perhaps she is going to have to use it from an overhead lamp socket. The chances are she does, for dealers haven't yet learned that to insure a future sale of heating appliances of all kinds and types they must first wire houses properly, equipping them with convenient receptacles.

Now, as a human being, not as an electrical contractor-dealer, you know that most people, not only women, are forgetful and neglectful, and that your customer is very apt, at some time or other, to run to answer a door bell or the telephone, and forget all about her iron; not so much forget about, perhaps, as neglect it because to detach it in a hurry is inconvenient. All sorts of things are apt to happen as a result. Proper explanation of the service such a cut-off switch will perform makes two sales grow where one grew before, gives the dealer two profits, speeds up turn-over and reduces overhead. That's why the drug store clerk today always asks if you have tooth paste when you buy a tooth brush, or asks if you need razor blades when you ask for shaving soap. That's using your heaven-given horse sense. That's all.

Following Up the Sale

Now don't stop with that. The sale is going to lead to future business, if you follow it up carefully. It's certainly going to lead to a satisfied customer. And when you have other women call in and ask you about the selfsame thing, make it a point to thank the first customer next time you see her. She'll do a lot of talking about the service you gave her and it's the very best kind of advertising you can get, for it's also good-will.

The trouble with most electrical contractor-dealers is that they are spending most of their efforts trying to sell washing machines, mangles, ranges and dish washing machines and are overlooking the little things that lead to the easy sale of those larger articles.

Incidentally, common sense should cause dealers to realize that it is the steady sale of these "little" electrical servants which pays running expenses.

Increasing Mill and Factory Production

Short Cuts and New Power Applications That Have Reduced the Cost of Manufacturing Processes or Increased the Rate of Production Together With Practical Methods That Have Been Devised to Cut Total Production Costs. Ideas and Suggestions by Practical Men

THIS DEPARTMENT will be devoted to a discussion of practical problems of factory operation and management. Readers' requests for information will be published in each issue, together with the answers to previous questions. It is hoped that readers will take full advantage of this opportunity to profit by the practical experience of others and to give others the benefit of their own discoveries. Space rates will be paid for answers which are published.

INFORMATION REQUESTED

Power Factor Rates in California —

Is there such a thing as a power factor rate in California? Just how does this operate? Under what conditions might advantage be taken of it? E. D. C.

Prevention of Headlight Breakage in Mines —

Has any protective device been worked out to guard against danger from headlight breakage on electric trucks used in mines? W. E. S.

Dependence on Single Transformer —

We have a small plant where continuity of service is absolutely essential. We plan to install one three-phase transformer in place of three single phase transformers. Is it inadvisable to depend on the single three-phase unit? K. B. T.

Advantages in Synchronous Motors —

I understand that it is advantageous to the power companies to have numerous motors of 50 hp. and over of the synchronous type on their lines. Is there any advantage to the user in the employment of such a motor? W. C.

Avoiding the Pole Fires —

We have been troubled with grass fires which endanger the poles on the extension line on our property. The power companies must have had to face the same problem. What inexpensive safeguard can be used? E. R. M.

Keeping Reflectors Clean —

We find some difficulty from the rapid dusting up of reflectors due to unavoidable dust conditions in our plant. Are there any special methods for remedying this situation? J. H.

PROTECTING MACHINERY FROM STRAY BITS OF IRON

Crushing and grinding machinery in industrial plants often suffers damage due to tramp iron. In the same way, iron particles, nails and other material which might prove injurious to cattle, often find their way into feed which is being prepared for the market.

The California Associated Raisin Company has solved the difficulty arising from this source by the use of a magnetic pulley. The raisins as they arrive from the vineyard in the so-called "sweat boxes" are not always carefully shipped and sometimes contain nails and other metal materials which would injure the seeding machinery. A magnetic pulley has therefore been installed between two buildings of the Fresno plant which catches all such waste and discards it while the raisins are in transit to the seeders and packers.

Pulleys used for this purpose may be of the greatest simplicity, consisting of a series of steel clad electric magnets mounted on a steel shaft, with much the appearance of an ordinary pulley. Current is carried through a pair of collector rings on the end of the shaft which is drilled to receive the wires leading to the magnets.

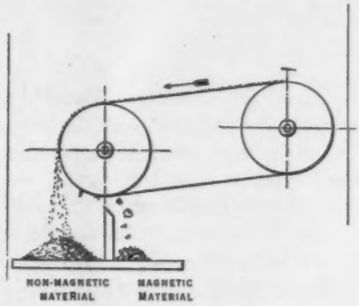


Diagram illustrating operation of magnetic pulley

The principle of operation of the separator is shown by the accompanying cut. The material to be separated is fed upon a belt conveyor passing over the separator. The non-magnetic material falls by gravity from the brow of the separator vertically into a suitable receptacle or to a conveyor, while the iron or magnetic materials are held firmly against the belt until carried to a point where the belt leaves the separator on the under side, and it then drops by gravity to a separate receptacle. Thus the magnetic materials are separated from the non-magnetic materials.

WASTAGE THROUGH BARREL STORAGE OF GLASSWARE

Most manufacturing plants and industrial establishments must figure on the storage of materials, both those intended for use in the maintenance of the plant and in the finished output of the works, whatever this may be. Among the contents of the storeroom may usually be reckoned glassware of some description, whether spare lighting equipment, special parts or other material. It is surprising how often this is stored and transported from place to place packed in the good old fashioned barrel, cushioned with excelsior.

In this connection the experience of the electrical manufacturers in the handling of lighting

Photograph of the typical material storeroom, showing the precarious position in which the barrel too often is found. Glassware packed and stored in this way has about fifty per cent less chance of survival than that packed individually in cartons.

equipment should be of value. Several experiments were conducted and careful records kept over a period of time, with the result that it was found that glassware suffered inexcusable fatalities under barrel storage. The barrel does not stack well, it requires two men to handle it, as a rule, it rolls with tempting ease—and in consequence it is subject to knocks which are never offered the lighter and more convenient container. In storage it is seldom securely placed—and when required again, invites the same rough treatment which it received during the transportation.

In consequence of these investigations, the manufacturers of illuminating equipment have uniformly adopted the paper carton as the safest method of packing material for shipment and of storing it after its arrival. Fully fifty per cent of the former losses were saved in this way. The principle is one which has obvious applications in other fields and might well be employed in the storeroom of the industrial plant.

IMPROVING LUBRICATION AND OIL PURIFICATION

The recent report of the Prime Movers Committee of the National Electric Light Association has many outstanding comments of great timely interest to those interested in more efficient power production in industry. Particularly interesting to western industry are excerpts from the report which deals with better lubrication. Quoting one or two excerpts from this report, we append a brief of one of the efficient lubricating systems described, as follows:

Continuous By-Pass System

The oil from the bearings returns after purification to the oil reservoir in the base of the unit where a vented sight overflow is provided, allowing a certain amount of oil to run continuously by gravity into a filter.

The clean oil is pumped back into the reservoir to resume its cycle of duties. Diagram of this system is here shown.

Given the proper oil and a clean circulating system, there should be no appreciable deterioration of the oil even after years of continuous service. Emulsion is caused by water and air accumulating in the oiling system. By continuously removing water and air, there is little opportunity for emulsion or the formation of sludge in a continuous by-pass system. The circulation of the oil is so rapid and purification of the whole charge so frequent that there should be no appreciable amount of sludge or much deposit in the turbine oil reservoir, in the piping or in the oil cooler coils. Therefore, frequent cleaning of the coils is unnecessary and their heat conductivity is unimpaired.

Organic acid increases at an accelerating rate once a small amount has accumulated. Analyses of oils which have been in constant use for years and purified by the continuous by-pass system indicate less than 1% acidity, and only a trace of moisture. It would seem that the acid is entrapped in the impurities and the continuous removal of them keeps down the total of acid content.

By continuously removing the agencies that cause impurities, emulsion, sludge, acidity, etc., it cannot be said how long a charge of oil may remain in service before, if ever, it becomes unfit for use. It is reported that new turbines equipped with this system have been in operation for periods up to 2½ years, with small quantities of make-up oil added,

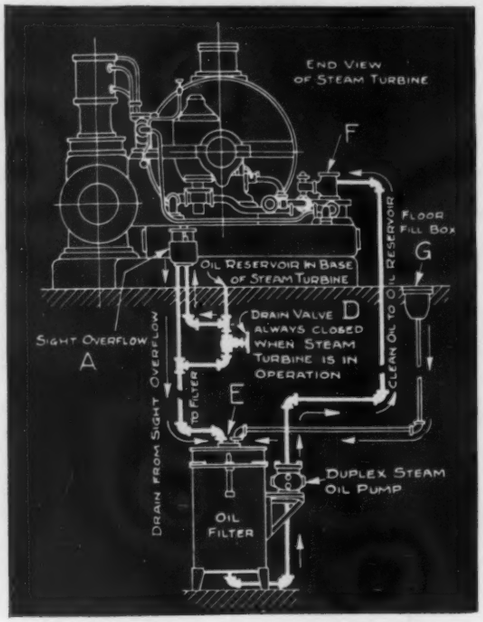


Diagram of connections for the continuous by-pass system of oil purification

and analyses made at the end of such periods show the oil to have the same lubricating value as when new, and to have an acid content of considerably less than 1%. This shows the importance of providing such a system when the turbine is installed.

Study Course

A University Accounting Course for the Contractor-Dealer and the Business Men in the Small Industrial Plant

BY PAUL B. KELLY

XI—THE PRACTICAL OPERATION OF THE STANDARD ACCOUNTING SYSTEM — OPENING THE LEDGER

You have several times been advised to immediately install and use the forms described in the first section of this course entitled "Gathering the Preliminary Data." Before the General Ledger is opened in the manner that will be described in this lesson, these forms should be in use. The Accounts Receivable Ledger and the Customers' Bill File should be in operation as described in Lesson 2. Likewise, the Accounts Payable Ledger and the Voucher File should be operating in the manner outlined in Lesson 4. The Job Envelope system should be in use. Of course, the Check Book should be so maintained that the actual cash balance may be obtained at any moment.

Indexing the Ledger

In opening the ledger, the first thing to do is to write a complete index to the accounts in the front of the book. Until you unconsciously memorize the ledger page numbers, it will be necessary for you to refer to this index every time that you post a journal entry. A complex index to the ledger was given you in the last lesson. The only thing that you have to do is to copy it into the ledger on the pages provided for it.

Heading the Account Pages

The next step for you to perform is to turn to each page indicated by the index and to write the name of the proper account on that page. As was explained in Lesson 10, this index is so devised that it will place the accounts in the ledger in the most convenient sequence and at the same time will allot to each the right number of pages.

Taking the Original Inventories

In starting a system of accounts, you will remember, we must begin with the accounting equation in balance and in harmony with the true state of affairs. Unless a double-entry set of accounts is already in operation, the only way to secure the data necessary to make the first entry to the ledger is by means of inventories. We must find the value of each asset and the total value of all assets. Similarly, we must ascertain the amount of each kind of liability and the total of all liabilities. The Net Worth balance is obtained by taking the difference between Total Assets and Total Liabilities. The first entry to the ledger must reflect the financial position of the concern at the moment at which the books are opened. Such a financial statement is a Balance Sheet. Therefore, in order to get the data that is necessary to open the ledger we must set about to establish a balance sheet by means of inventories which will show the true financial position of the concern at the date when the ledger is opened. The balance sheet must be so compiled that it will present a true statement of all the assets and liabilities at the particuar moment.

Fixed Investment Inventories

Real Estate —

The asset listed first in the balance sheet is Real Estate. Make up a list of all real estate owned by the business. The term Real Estate includes all land and buildings. List the items of real estate at their cost price to you. List the cost of the land and the cost of the buildings separately. If necessary, estimate the portion of the cost price attributable to land and the portion attributable to buildings. Show the date that you acquired each item. Show the estimated life of each building at the time that you acquired it. Calculate the annual depreciation charge on each building. You obtain this charge by dividing the cost price of the building by its estimated future life when you acquired it.

Next, show the number of years that have elapsed since each building was acquired. Then list the total depreciation accrued on the building to the date of the balance sheet. You obtain this figure by multiplying the annual depreciation charge by the number of years that have elapsed since the acquirement. The schedule of real estate should appear about as follows:

INVENTORY OF REAL ESTATE Jan. 1, 1921.

Item	Location	Cost	Est. Life	Dep Chg	Time Elpsd	Dep'n Acc'd	Pres. Value
1 Lot	426 Shattuck	3000					3000
1 store Bldg	" "	3000	20Yr	150	5 1/2	825	2175
1 Lot	2052 5th st.	1000					1000
1 House	" " "	3000	15Yr	200	3 1/4	650	2350
Totals		10000		350		1475	8525

You now list the totals in your balance sheet as follows:

BALANCE SHEET Jan. 1, 1921.

Real Estate	10000	Res. Dep. on Real Estate	1475

The difference between the cost price, which is shown on the left side of the balance sheet, and the Reserve for Depreciation on Real Estate, which is shown on the right side, represents the present value of the real estate to the going concern. The truth of this statement is not altered by the fact that the owner could sell the real estate for a higher price

than he paid for it. Until such a sale is made, this asset, like every other asset, must be shown at cost less depreciation accrued.

Furniture & Office Appliances
Automobiles
Tools

Schedules exactly similar to the one drawn up for Real Estate should next be prepared for these three kinds of assets. The figures obtained should be entered in the balance sheet.

Cash Guaranties —

Sums of cash deposited as guaranties that the requirements of local city ordinances will be complied with are listed under this heading. A list of such cash guaranties can be quickly made and the total should be entered in the balance sheet.

Investments —

This account includes all stocks, bonds, and mortgages of other companies acquired for investment or any other purpose. These items should be listed at cost.

The balance sheet in so far as you have completed it will appear about like this:

BALANCE SHEET Jan.1, 1921.

FIXED INVESTMENTS			
Real Estate	10,000		
Furn. & Off. Appl.	700	WORKING RESERVES	
Automobiles	1,800	Res.-Dep. on Real Estate	1,475
Tools	300	Res.-Dep. on Fur.& Off.Ap.	370
Cash Guaranties	125	Res.-Dep. on Autos	750
Investments	500	Res.-Dep. on Tools	150

Current Asset Inventories

Merchandise —

Next, it will be necessary for you to inventory the stock of merchandise. Value this at cost prices. Go through all your stock and make a list of what you have on hand. Cost this list and make all calculations after you complete actual counting. It is best to take this inventory on Sunday or some holiday so that you will not have to make adjustments because of sales made during the day.

This account, also, includes the cost value of the merchandise which has been taken out on unfinished jobs. The amount of material on unfinished jobs may be secured by making a list of the totals shown in the "Material" column on the Job Envelopes in the "Unfinished" file.

A certain percentage of this stock will become worthless through obsolescence. Make a Reserve for Depreciation on Merchandise equal to the cost of the portion of the merchandise inventory that will probably become worthless due to this cause. Estimate this loss liberally. It pays to be conservative. We will assume that as a result of the inventory you enter the following items to the balance sheet:

BALANCE SHEET Jan. 1, 1921.

Merchandise	6,000	Res.-Dep. on Merchandise	200

Direct Job Expense Unbilled —

This account represents the amount of direct job expenses that have been incurred on Unfinished Jobs. Such expenses are eventually billed to the customer just like the material. In the meanwhile they represent an asset and must be shown as such. The total amount of Direct Job Expense Unbilled is obtained by adding the amounts shown on the Job Envelopes in the "Direct Job Expense" column.

Labor in Progress —

In a similar manner take an inventory of the cost value of Labor in Progress. Labor in Progress includes the value at cost of the unbilled labor expended on unfinished jobs. You can quickly secure the amount of Labor in Progress by taking the total of labor shown on the Job Envelopes in the "Labor" column. Of course, it is manifestly necessary that the Job Envelopes should have everything posted to them up to date, when these totals are drawn off.

Notes Receivable —

Under this heading list all notes receivable on hand showing the names, dates, and amounts. Many contractor-dealers will have no use for this account.

Accounts Receivable —

The total value of accounts receivable is easily obtained if the Accounts Receivable Ledger has been kept in the manner described in Lesson 2. All that it is necessary to do is to list the balances shown in the various customers' accounts and to secure a total. Be absolutely certain that this list of balances and the footings are correct. Enter the total in the balance sheet.

Trade Acceptances Receivable —

The total face amounts of all trade acceptances held by the contractor-dealer should be placed in the balance sheet under this heading. Trade Acceptances Receivable are drafts in the possession of the contractor-dealer that have been drawn on some person in settlement of a trade debt and which have been consented to, or, "accepted" by that person. Few dealers will have occasion to use this account.

Cash —

The inventory of cash can be quickly obtained by adding to the balance shown in the check book, any cash received and not yet deposited in the bank.

Petty Cash & Cash in the Drawer —

It is customary to keep a certain amount of cash for change-making purposes in the cash drawer. Also, it is customary to set aside a certain amount of cash in what is known as a Petty Cash Fund. The operation and the purpose of setting aside these sums of cash is explained in Lessons 3 and 4. These sums of cash are distinct from the bank cash. They are combined in one account for convenience and are listed in the balance sheet under the above title.

Money in Escrow —

Money in escrow is money belonging to the contractor-dealer which he has delivered to a trustee to be paid by the trustee to a third party upon the performance of some condition. The condition, for example, might consist of the transfer by deed of property owned by the third party to the contractor-dealer. Few contractor-dealers will find use for this account. However, if money in escrow exists, list it in the balance sheet under this title.

Cash Advances —

The term Cash Advances is used to cover all temporary or permanent advances of cash to employes on account of traveling or other expenses, when such advances are to be accounted for at a future date. It also includes certified checks deposited with bids. Some contractor-dealers may find no use for this account.

Deferred Assets

The nature of Deferred Assets was explained in Lesson 7.

Insurance Premium Advances —

Make up a list of the unexpired insurance policies showing the data as in the following schedule:

INSURANCE PREMIUM ADVANCES

# 6059306 London Assur.Co. $2000 on Mdse Rate $1.00 From 7-1-20 to 7-1-21	20.00	#6059306 Lon.Assur.Co. Expired to date (1/2)	10.00
# 6430546 London Assur. Co. $3000 on Mdse Rate $1.00 From 10-1-20 to 10-1-21	30.00	#6430546 Lon.Assur.Co. Expired to date (1/4)	7.50
	50.00	To Balance	32.50
			50.00
Unexpired Ins. Premiums	32.50		

Enter the total of unexpired insurance premiums in the balance sheet under the heading "Insurance Premium Advances."

Taxes Paid in Advance —

Make up a similar schedule of the taxes that have been paid in advance. Show the date and the total paid on the left side. On the right side, show the portion expired at the date of the balance sheet. The difference between the two sides represents the Taxes Paid in Advance and should be shown in the balance sheet under this title.

Deferred Charges to Income —

List under this title any other Deferred Charges of importance. A large stock of stationery, for example, should be listed under this heading.

If other assets exist, they should be inventoried and entered in the balance sheet in the proper section under an appropriate title.

Fixed Liabilities

Most contractor-dealers have no fixed liabilities. However, if fixed liabilities such as mortgages or long term notes payable do exist, enter them in the balance sheet in this section under the proper title.

Current Liabilities

Notes and Acceptances Payable —

Make up a list of the notes payable issued to banks or to business houses. Show in this list the date issued, the date due, and the amount of each note. Secure total and enter in the balance sheet.

Acceptances Payable are drafts drawn against the dealer by other persons which the dealer has obligated himself to pay when due. If the dealer has such liabilities, he should prepare a list similar to that of Notes Payable and should list the total in the balance sheet.

Accounts Payable —

The total of accounts payable is easily obtained by drawing off a list of the balances shown in the Accounts Payable Ledger. Be certain that the list and the footings are absolutely correct before entering this item in the balance sheet.

Taxes Accrued —

If taxes are paid for past periods instead of in advance, at any date, a tax liability for a part of the estimated taxes for the current year exists which is proportionate to the time that has elapsed since the beginning of the tax year. Make up a list of such tax accruals, if there are any, and enter the total in the balance sheet.

Other Current Liabilities —

If any other kinds of current liabilities exist, inventory them and list them in the balance sheet.

Net Worth

The inventory of assets and liabilities is now completed. The Net Worth figure is obtained by taking the difference between them.

Total Assets	32,000		
Less Working Reserves	2,000		
Present value of Assets		30,000	
Less Liabilities		15,000	
Net Worth			15,000

The Net Worth figure is shown in the balance sheet under the proper title. What the proper title for the Net Worth balance is depends upon the type of business ownership as discussed in Lesson 7.

Opening the Ledger Accounts

This balance sheet must be entered into the ledger in order to create the original accounting equation. The first Journal Entry is merely a copy of this balance sheet made on page 1 of the journal. From the journal, all these figures are posted to the proper accounts in the ledger. The ledger pages are noted in the folio columns to indicate that the items in this journal entry have been posted.

In posting these inventories, it is advisable to enter in the ledger much of the information shown in the detailed schedules that were made in the process of inventorying. The extent to which this detail should be shown in the ledger is a matter in which judgment must be exercised. The details of such inventories as Merchandise, Direct Job Expense, Labor in Progress, Accounts Receivable, and Accounts Payable should not be entered in the ledger. Most of the details of the other items in the balance sheet should be entered in the ledger for a permanent record of this information is necessary.

The first balance sheet should also be recorded in the "Statements" or "Trial Balance Book" for comparative purposes. The record in the Trial Balance Book of the first balance sheet should be drawn directly from the ledger. It is thus a trial balance of the ledger after the first journal entry has been posted. It is essential that the first entry to the ledger be correct, and the books started in balance.

Future Work

The ledger is now in operation. It contains a picture of the financial position of the business at one particular date—the date of the balance sheet. This picture remains true only for a moment. Every business transaction alters it. These transactions must be reflected in the ledger and in subsequent balance sheets.

Western Dealer, Jobber and Agent

Business building suggestions for the store—
Distribution and warehousing methods—
Advertising and sales promotion ideas

EFFECTIVE WINDOW MERCHANDISING

BY R. E. CHATFIELD
Executive Secretary, British Columbia Electrical Development Association

Four distinct steps are necessary to make a sale. First, the attention of the prospective customer must be attracted—second, attention must be converted into interest—thirdly, interest developed into a desire to possess and the final step of developing desire to possess into decision to buy.

The New State Electric Supply and Fixture Company of 214 East Washington Street, Phoenix, Arizona, recently overcame the first two steps in the consummation of a sale by a very clever window display of electric fans. Fans of every size filled the window, the brass blades making a yellow background against which a sixteen inch fan in motion stood out prominently.

The thermometer registered 120 degrees in the shade and on the blazing street there was no shade but from the darkened interior of the store a current of cool air was forced out on to the street by three large fans. Such a marked difference in the temperature naturally attracted the passerby who paused to look into the window at the merchandise displayed. The cool breeze coming thru the open door momentarily aroused attention into interest and the average passerby who paused stepped into the store to inquire price, cost of up-keep and so on, gave the salesman an opportunity to clinch the sale.

The effective window display half made the sale for the firm before the prospective customer entered the store. Effective merchandising can be promoted by effective window displays of this type and the contractor-dealer will find more attention paid to window displays will bring more merchandise.

HOW, WHEN AND WHERE TO SELL CONVENIENCE OUTLETS

BY WALTER F. PRICE
Electrical Equipment Expert, California Electrical Cooperative Campaign.

Do you know that a very large majority of homes are built by home builders without the supervision of an architect?

Do you know that these builders either draw their own plans or buy them from architects, merely as a guide for the general arrangement of the house?

Do you know that they seldom work from written specifications?

Did you ever see a whole block of new houses, each one apparently different from the other, then go through them and find that the floor plans are all just alike, built from one set of prints, with the front elevation changed on each to distinguish them?

These are some of the conditions that I have seen and know exist in California.

This type of home builder never gives the electrical wiring much thought until the framework is up, because he isn't just sure how it's going to look himself until that time. Then he sends for the electrician, and he invariably picks out the small electrical contractor because he has no office and will come out to the job and submit his bid.

Right then is the time to sell the builder more convenience outlets. That is the "critical moment." Soon the laths will be on and it's too late.

One of the most successful electrical homes exhibited in California was designed by an architect and turned over to the builder without specifications and with no electrical outlets shown on the plans. The builder decided the front porch and entrance should be on the sunny side so it was necessary to turn the blueprints upside down to make them fit the lot where he wanted to build it. As usual the electrician was called in after the frame was up and told to wire it just the same as the last job. When I happened along the wireman was pondering over the plans, turned upside down, trying to figure out where several partitions had been changed.

And yet the thousands of people that went through this electrical home do not know these facts.

Then it's up to the electrical contractor and his wireman to do the selling.

The field secretary from the Campaign cannot be in every new house at that "critical moment."

Just point out to the builder where these convenience outlets should be, show him one of the California Electrical Cooperative Campaign's little wiring plans, make him admit that he likes all of these electrical conveniences in his own home, and then ask him if he thinks he is treating his clients right by not providing the necessary convenience outlets for their appliances. Ask him how he expects to advertise "Modern Homes For Sale" if they are not equipped with a reasonable number of convenience outlets in each room. Compare the total cost of the wiring with the modern bathroom that he is building and just see if he doesn't look sheepish and tell you to go ahead and put in more outlets.

Of course, this must be supplemented by the exhibition of modern electrical homes and various forms of convenience outlet advertising so as to always keep the "secret of electrical convenience" in the minds of the people, and particularly the prospective home buyer, who will follow up your arguments by demanding more convenience outlets when they buy new homes.

The whole interior of the store looks like a home drawing room.

A shadow booth and an easel background for displaying individual fixtures

Special booths are provided for the display of hanging fixtures.

There is no crowding and yet there seems to be a sample of everything.

A NEW SYSTEM FOR SELLING LIGHTING FIXTURES

Upstairs Store, Planned as Living Room Has Effective Arrangements for Assisting Customers

A salesman for a lighting fixture house once found that it was easier to sell a customer a fixture if there was only one instead of a hundred to look at. In the old store there was a veritable mass of fixtures of all sorts suspended from the ceiling, and while the customer might want only a twenty-dollar fixture, when it was hanging alongside one that sold for one hundred dollars it looked miserable, and having made up his mind not to spend over twenty dollars the customer decided that there was nothing in the shop that appealed. This salesman found that when a customer came in after a fixture and was at once escorted to a back room, comfortably fitted up without any fixtures in it and a twenty-dollar fixture was brought in, or several fixtures of the same approximate price, the customer had little difficulty in making a selection.

Taking this idea as a basis, William T. Boyd proceeded to find a suitable loft in an office building. The place he selected was just over the office of one of the leading real estate firms of San Francisco who deal in high class residences. This loft he fitted up into a very comfortable living room and arranged the booths along the sides of the wall, each booth containing a separate lighting fixture controlled by a push button at the side of the booth. These fixtures, however, served only as types, as a great deal of the work done is of special design. In the back room are ranged the small fixtures, one of them being set in a shadow box arrangement so as to show it alone when it is lit and the rest of the room in darkness. Also, there are several different types of wall fixtures mounted on panels of different colors which are supported by an easel, this idea giving the prospective buyer an idea of what the fixture looks like on different colored backgrounds.

In speaking of his idea, Mr. Boyd stated that most of the fixture sales that amounted to anything were not obtained from people passing by on the street and for that reason a ground location was not necessary. Most of the business must be gone after and solicited. In answer to the question as to whether or not considerable bread-and-butter business was lost by not selling small fixtures, lamps, etc., Mr. Boyd contends that not having to carry a large stock of material considerably cuts down expenses and offsets such minor sales. A store of this type is only after the high grade trade and does not care to figure on cheap fixtures such as are installed in the houses that are built on the wholesale plan.

GETTING READY TO SELL OUT

BY CARL K. CHAPIN

Are you ready to sell out? Could you sell if you wanted to? The question is one for all of us to ponder over, whether we contemplate such a step or not.

If a man is going to buy you out,—lock, stock and barrel, as the saying is, you would be so busy getting ready to put your best side uppermost, you would hardly have time to eat. The harder and colder a buyer you thought him to be, the more judgment you would use in arranging to display your goods to advantage.

Don't you know that Mr. Will B. Sold is about the hardest customer in the world just now, to sell anything to? And he isn't even related to Mr. E. Z. Sold you have had so much business with heretofore.

Go over your old stock that cost you good money —clean it up, relaquer or paint where necessary, or have parts renickeled, and it will bring three or four times junk value, but if you let it continue to kick around, someone will carry it home because it's not much good any longer, or else it will be junked sure enough to make room for something that you must buy new.

Begin at your front door and ask yourself the question, "would I buy this store if I were looking for one?" It's ten to one you wouldn't. Now if you can spend a few days taking summer inventory of yourself and your establishment, you will be so busy making sales in two weeks that you will forget all about the dirty job it was to get ready to sell out, and you will be ordering new, up-to-the-minute stock for the fall and winter trade. Sell yourself your own store first.

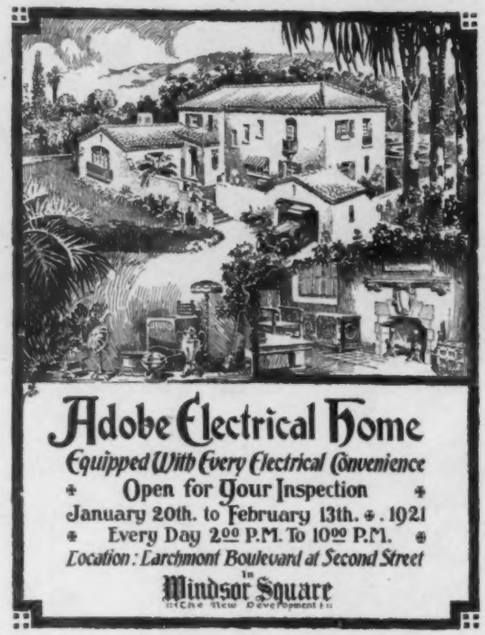
MOTOR WINDING CHARTS AN ASSISTANCE IN HANDLING REPAIR WORK

In handling a piece of repair work of which the electrical contractor-dealer is not familiar with the previous history, it sometimes develops that the source of the trouble is an incorrect repair which has been performed in some other shop. In such cases, F. T. Broiles of the International Electric Company of Los Angeles, says that it has paid him well to know, from prepared charts, the correct winding data of motors and motor apparatus. These charts are gotten up in a form similar to "Take Off Material" sheets and provide a quick check. With the correct winding of the motor before his eyes, the man handling the work can readily note mistakes in winding or other careless errors of former workmen, which might otherwise take some time to locate.

This is one of the numerous small methods for saving time in the repair shop which are not only of value to the man who wishes to make the most out of the time of his employes, but also makes it possible for lower prices to be charged on repair work and thus pass the benefit along to the customer. It is just such kinks which lift the repair department from the position of a nuisance in the shop to that of an asset to the business.

ELECTRICAL HOME SCRAP BOOK ISSUED BY CALIFORNIA COOPERATIVE CAMPAIGN

The book on California Electrical Homes which the California Electrical Cooperative Campaign has had under way for some time is now ready for distribution. It has been prepared, as explained in the foreword, "in order that other sections of the country may benefit from experiences in connection with the California Electrical Homes," and is a comprehensive handbook of how such a campaign may be conducted.


Adobe Electrical Home
Equipped With Every Electrical Convenience
Open for Your Inspection
January 20th. to February 13th. . 1921
Every Day 2.00 P.M. To 10.00 P.M.
Location: Larchmont Boulevard at Second Street
In
Windsor Square

One of the many illustrations which help to make the booklet published by the California Electrical Cooperative Campaign of practical value.

The subject matter covers the objects of the Electrical Home campaign, the methods employed to carry it out, financing, wiring installation, appliance installation, interior decoration and furnishing, exterior illumination and advertising, as well as the details necessary in the management and exhibition of the Homes. Samples are given of booklets, profusely illustrated with views of the Homes, and methods used to call the attention of the public to their exhibit. The campaign used to put on the Adobe Electrical Home of Los Angeles is described in detail, as typical of how the principles outlined may actually be put into effect.

Considerable space is devoted to a discussion of advertising methods, the expense of which is borne jointly by the electrical industry and the other interests concerned. Newspaper advertising consisted of direct advertising, handled by the committee in charge and tie-in advertising, through the regular advertising space of the various electrical interests. Bill board advertising was used when advisable as well as street car advertising, gaged by the number of persons carried on this route. Extensive circularizing was done, both in the form of invitations and by distributed folders. All this was supplemented by news stories in the main sections of city newspapers.

Activities of the West

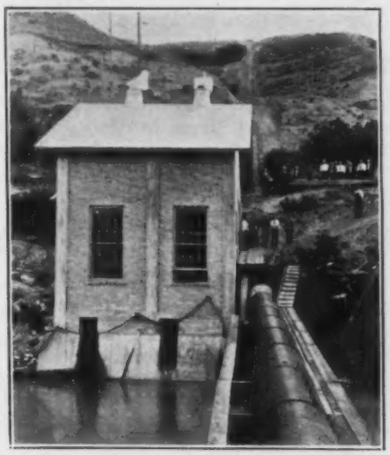
A Business Man's Department Devoted to Events and Developments in Western Industrial Centers – Including News of Interest to Readers in Public Utility, Industrial and Trade Fields

Electricity Aids Irrigation

Provo Reservoir Company's Pumping Plant Starts with 500 Hp. Installed

One of the large electrically operated pumping plants of the West, that of the Provo Reservoir company, situated at Jordan Narrows, about twenty miles south of Salt Lake City, Utah, was recently placed in operation. The plant, which has just been completed, consists of two units, with an initial capacity of 500 horsepower, and it will undoubtedly be increased from year to year, as the operations of the company increase. The larger of the two units is capable of pumping twenty-two second feet of water, and the smaller will handle ten second feet.

Shortly after the electric current was turned on 9900 gallons of water per minute was pouring into the company's canal 250 feet above the Jordan River Narrows. The canal flow thus augmented carries approximately 100 second feet of water, part of which flows south into the Utah valley, a distance of eight miles, and part north into Salt Lake valley, more than twenty miles, carrying water to the farm lands of Riverton, West Jordan and Taylorsville districts in the central western section of Salt Lake county.



Recently completed irrigation pumping plant which has been placed in operation by the Provo Reservoir Company. Two electrically operated pumps requiring 500 hp. are installed.

The plant was constructed for the purpose of pumping water from the Jordan river into the west arm of a syphoning system which the company has maintained for the last five years, and through which is conveyed water from the company's storage reservoirs at the head of Provo river, into which is collected overflow and regular flow of the river.

Toward midseason, however, depletion of the reservoir storage has necessitated the cutting down of the supply delivered to land owners under the canal, and the plan of using electrically operated pumps for increasing the flow into the syphon line from the Jordan river was conceived and placed in successful operation. The result will be to insure a steady and adequate flow through the canal throughout the entire irrigation season.

The canal has a maximum capacity of 125 second feet. Approximately 10,000 acres of land is susceptible to irrigation under the canal, and more than 7,000 acres are now being irrigated. The land lies from five to twenty miles south and west of Salt Lake City, and is of a rich, sandy loam, capable of producing large crops of alfalfa, sugar beets, potatoes and other staple soil products. Many thriving and profitable orchards have been brought to a high state of cultivation also in this section. Some of the finest homes and schools in the state have been built throughout the districts supplied by the canal. Paved roads reach within easy distance of nearly every farm home, and electric light and power afford conveniences that are unsurpassed in any farming section of the state.

Representatives of state officials, officials of Utah and Salt Lake counties, business men of Salt Lake and communities in the two valleys, many farmers whose lands are producing abundantly under the canal, and directors of the reservoir company were present at the ceremony which started the electric pumps. Many expressed wonder that water in such quantities could be lifted 250 feet, from the Jordan river to the canal level. This is the second highest lift in operation in the state of Utah.

Los Angeles Files Claim for Damsite on Colorado River

The City of Los Angeles and the Board of Public Service Commissioners of the City of Los Angeles recently filed an application with W. S. Norviel, State Water Commissioner for the state of Arizona. The application is for a damsite in Boulder Canyon on the Colorado River. They also filed another application for permission to use the water to be stored there for power purposes.

The application stated that approximately 26,000,000 acre-feet of water will be stored behind the dam and that 10,400,000 acre-feet of this would be in Arizona and the balance in Nevada.

Columbia Entrance Deepens

Government Engineers Report Depth of 43 Feet Over a Width of a Mile

The channel at the mouth of the Columbia river continues to grow wider and deeper each year and the bogey of a "bar at the mouth of the river" is a thing of the past.

This is proven by the recent report of the United States Engineers Department, which has just completed its annual survey at the mouth of the river. The survey was conducted under the direction of Major Richard Park of the district office.

The report says that there is a channel 43 feet deep for a width of 5280 feet this year against the channel of 40 feet depth and 4500 feet width reported last year. There is also a channel of 42 feet depth for a width of 6400 feet this year.

This channel improvement results from the scouring action of the waters at the mouth of the river which flows between the north and south jetties constructed in 1913. The scouring is continuing constantly with the prospect that the channel will continue to improve from year to year.

With a channel 42 feet deep and 6400 feet wide the entrance to Portland is now one of the safest on the Pacific Coast. Some fear had been expressed that the heavy summer freshet this year would fill up the river channel, but the survey proves conclusively that the channel is in better shape than it has ever been before.

$13,500,000 of Hetch-Hetchy Bonds Sold to Complete First Unit

The Construction Company of North America, which holds the contract for tunnel work in the mountain division of the Hetch-Hetchy project, purchased $13,500,000 worth of 5½ per cent Hetch-Hetchy bonds on August 1st. The bonds were bought at par plus a $10,000 premium which was paid to the city. The Construction Company also secured an option until November 1st, 1921, on an additional $8,520,000 worth of the same bonds. The sale of these bonds makes available sufficient funds with which to complete the 18 miles of tunnel from Early Intake to Priest, the earth fill dam at Priest, penstock from that point to the Moccasin Creek Power House, and also for the construction of and the equipment to be installed in the power house. These bonds were placed on the market August 9th, and the first day's sales amounted to nearly $1,000,000 on the Pacific Coast alone.

California Establishes Department of Public Works

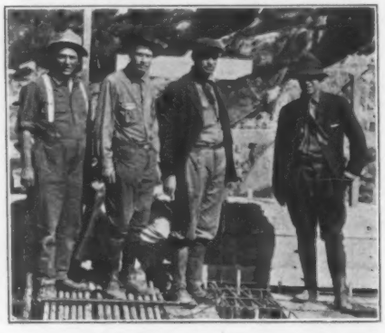
In accordance with measures passed at the last session of the California State Legislature, the Board of Control has completed the reorganization program which was called for in the interests of economy and efficiency in government affairs. The new program provides for seven departments under which all the work of the state will be done and which will replace eighty or more existing state agencies. Under the new program, which went into effect July 30, chief responsibility is vested in a Department of Finance.

For the present it was not considered feasible to make an immediate and absolute change of the full scope implied by the naming of these several departments. Existing departments will rearrange, for the most part, so as to conform to the new plan and to interfere as little as possible with the present personnel of governmental machinery.

The Department of Public Works will for the present have as its director, or senior engineer, the chief engineer of the State Highway Commission, who will add that duty to his present work without increase of salary. The department will have five subdivisions, as follows: Highways, Engineering, Water Rights, Land Settlement and Architecture. The State Engineer retains his title and continues his present duties under the general jurisdiction of the Department of Public Works.

Big Creek No. 8 Hydro-Electric Unit Completed

On August 11th, the Southern California Edison Company brought into service the hydroelectric plant known as Big Creek No. 8. This adds 30,000 hp. to the connected load of the company and is the third large power unit that this company has put into operation this year, others being the third unit of 22,000 hp. in the Big Creek No. 2 and the 40,000 hp. plant on Kern River. Work on the Big Creek No. 8 plant started on May 4th, and the completion of the construction work in but a few days more than three months has established a record for power plant construction. In the illustration are shown the men who were "on the job."



Here are the men who built Big Creek No. 8 in record time. From left to right they are: O. H. Honnold, electrical foreman; Walter Bauermeister, foreman transmission lines; "Bill" Whitmire, construction foreman, and "Joe" Rogers, electrical superintendent.

One Million Cords of Alaska Pulpwood Purchased

Timber Resources of Alaska Made Available to Overcome Shortage of Paper Pulp in the United States

One million cords of pulpwood on the Tongass National Forest, Alaska, has just been sold by the Forest Service of the United States Department of Agriculture to the Alaskan-American Paper Corporation. The timber is located along the east shore of the Bohm Canal, Revillagigedo Island, about 32 miles from Ketchikan, the largest city in the Territory. The contract price of the timber was 60 cents per 100 cubic feet for spruce and cedar, and 30 cents per 100 cubic feet for all other species. The sale area covers 45,000 acres and extends for 55 miles along the coast. Twenty per cent of the forest is spruce, 66 per cent hemlock, and 14 per cent Alaska and western red cedar.

A condition award has been made by the Forest Service to the company pending approval by the Federal Power Commission of their application for a hydroelectric power license. The timber sale contract covers an initial period of 32 years, or until 1953. The price of the stumpage will be re-determined and fixed by the Federal Government in 1928, and every five years thereafter. Cutting must begin by October 1, 1923, thus allowing two years for organization and construction of improvements. The contract also requires the establishment of a pulp mill of not less than 25 tons capacity by October 1, 1926. A yearly cut of from 2½ to 3 million cubic feet is contemplated.

The award of this sale is in line with the general policy of the Forest Service for making available the timber resources of Alaska as a means of increasing the supply of pulpwood for the United States. The National Forests of the Territory probably contain 100,000,000 cords of timber suitable for the manufacture of newsprint and other grades of paper. Under scientific management, experts say that these forests can be made to produce 2,000,000 cords of pulpwood annually for all time, or enough to manufacture one-third of the pulp products now consumed in this country.

The Alaska forests also contain the second chief essential of the pulp and paper manufacturing industry, namely, water power. No accurate survey of the power resources has yet been made, but known projects have a possible development of over 100,000 hp., and it is believed that a complete exploration of the National Forests in southern Alaska will show not less than a quarter-million potential horsepower that can be developed from water.

Forest Service cruisers are now working in Alaska collecting data for further use and development of the forests. One block of timber containing 335,000,000 cubic feet—enough to keep a 100-ton pulp mill running, has been advertised and is now ready for sale.

Committee for Northwest Super-Power Survey Starts Work

The committee which has been organized to study the needs and desirabilities of working toward a super-power transmission system in the Northwest is soon to send out a questionnaire to the utilities and industries in that section to gather data for a comprehensive study of the entire situation.

It is not expected that active steps will be taken toward any actual construction within a period of several years as the immediate needs of the territory are being satisfactorily taken care of by the existing organizations and transmission systems. Until the industrial expansion exceeds the capacities of the present systems and the available minor power sites are all developed there appears to be no economic pressure which will force the development of the major power site which can feasibly be developed only in large blocks. In this territory the primary basis for the development of a super-power transmission system is not the saving of fuel but the expansion of industry and agriculture through the development of the large hydroelectric resources as yet practically untouched.

The work of the Super-power Survey Committee was highly endorsed by a resolution passed at the annual convention of the Northwest Electric Light & Power Association recently held in Portland, and the moral support and aid of the association was pledged to the committee.

Engineers Hear California Highway Situation Discussed

The San Francisco Engineering Council invited authorized representatives of the California State Highway Commission and the California State Automobile Association to discuss the points at issue in the controversy between these two organizations regarding the State Highway situation. W. C. Howe, consulting engineer and member of the board of engineers, who reported on conditions of the State Highway system for the Automobile Association, spoke for the association. He reviewed detail of criticisms of past and present policy of the commission and offered suggestions as to changes which were desired. T. E. Stanton, assistant highway engineer for the California Highway Commission, presented the case of the commission setting forth the policies it had followed and the limitations under which it had worked. Following the formal presentation, a spirited series of questions and discussions ensued. It was apparent from the discussion that the Automobile Association is willing to aid in raising funds for road work if suitable roads could be secured, and the Highway Commission seems to be more than willing to build adequate and substantial roads if sufficient funds are available. No plans were announced for further attempts to get the two sides together and check the present undesirable publicity attending the controversy.

Electric Range Sales Will Remedy Commercial Inactivity

H. F. Jackson, general manager of the Great Western Power Company, sees in the sales of the electric range, the electric water heater and other household appliances a means of stimulating trade. He also sees in the sales of this equipment an opportunity to render service to the people that will result in economies that are desirable at this time in the home. In speaking of the electric range campaign just instituted by his company, Mr. Jackson said:

"The company I represent, has issued orders for an immediate sales campaign for the electric range and the electric water heater. We propose to given our consumers the very best service and prices obtainable. We propose to assist our customers in financing themselves in the buying of these ranges and water heaters as well as giving them the advantage of such prices as we are able to secure on wiring material and wiring devices that go with them. The contractor-dealers of the communities which we serve will be given the advantage of these prices in order that the range installation may be made at the very minimum cost to our consumers. We are also making a sale of power at such a figure as to make the household range and water heater of economic value to the housewife. I see great possibilities ahead for the electric range and water heater and our company is going to do everything we possibly can to let our consumers benefit by the situation."

Industrial and Trade Exposition Los Angeles, Aug. 15-20

At the Exposition Building, located at East 7th Street near Alameda in Los Angeles, will be held an unique industrial and trade exposition market week. Members of the electrical industry will be unusually interested in knowing that a complete display of electrical devices will be made at this exhibit. The idea is that particular emphasis is to be given to bringing the electrical idea home to the public and to show the possibilities of electricity in industry, in agriculuture and in the home.

Meeting of Advisory Committee, California Electrical Co-operative Campaign

August 1st and 2nd were red letter days for the electrical industry in Los Angeles due to the activities of the California Electrical Co-operative Campaign. At the open meeting held at the Jonathan Club on August 1st, the following repersentatives of the electrical industry were present:

Al Morphy, H. H. Courtright, G. E. Armstrong, Garnett Young, Ferguson, Harry L. Harper, A. B. West, A. W. Childs, K. E. Van Kuran, Robert Sibley, R. E. Eltringham, Clyde Chamblin, Carl K. Chapin, H. E. Sherman, A. O. Hollowell, Newton Graham, Allen, P. H. Booth, Phil Gough, J. O. Case, H. L. Miller, J. W. Redpath, Robinson Farmer, Frank Weiss, J. L. Kline and J. G. Pomeroy.

The discussions at the business sessions of the advisory committee were largely concerned with activities for the coming year, and it was decided that the Campaign would devote special emphasis to the installation of cooking and heating appliances in the schools and colleges of the state, doing everything possible to forward their use. Definite methods for forwarding the convenience outlet campaign by display signs and theater advertising were discussed. It was decided that joint offices of the Campaign be taken with the Pacific Coast Division, N. E. L. A., and that these headquarters be secured in the Rialto Building in San Francisco, if possible. It was specifically stated, however, that while joint offices were to be taken, that this did not mean the blending of the activities of the two associations without further sanction of the membership at large.

In order that complete unity of plan for the coming year may be evolved, it was decided to hold meeting with the four branches of the industry in Los Angeles and similar meetings in San Francisco to get the sentiment now prevailing, and the latter part of August to call a full meeting of the advisory committee of the Campaign in San Francisco to finally determine upon plans for the coming year.

Salt Lake City Commercial Club Appoints Water Power Committee

The Commercial Club of Salt Lake City has appointed a Water Power Development Committee, consisting of the following members: Lafayette Hanchett, chairman, president Utah Power & Light Co.; Simon Rosenblatt, secretary, Utah Steel Corporation; S. R. Inch, vice-president and general manager, Utah Power & Light Co.; R. H. Felt, district manager, E. T. Chapin Co.; R. E. Bailey, power sales manager, Utah Power & Light Co.; C. B. Hawley, vice-president and manager, Intermountain Electric Co.; J. J. Johnson, civil engineer; John F. MacLane, general attorney, Utah Power & Light Co., and C. E. Murdock, Gray & Murdock, engineers and contractors.

The duties of this committee will be to study applications for power sites, and to encourage proper development of the water power resources of the state of Utah.

Southern Contractors and Dealers Issue New Bulletin

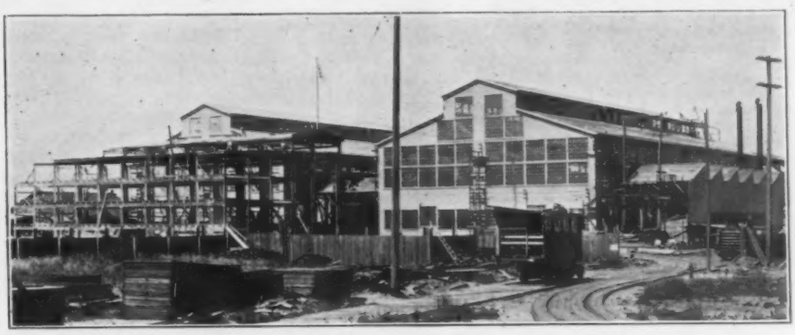
An attractive sixteen-page booklet has been issued by the Electrical Contractors and Dealers of the Southern District of the California State Association of Electrical Contractors and Dealers. Robinson Farmer, the able secretary of the Southern District, appears as editor of the bulletin. The initial number contains a little description of the Catalina outing of the Association, the Electrical Home Scrapbook, a poem on Co-operation by Richard E. Smith, and a description of one or two of the present day hydro-electric developments in the West.

New Tax System Advocated by Northwest Lumbermen

Adoption of the British Columbia yield tax system, with certain modifications was advocated by leading lumbermen at the closing of a hearing of the national forestry policy committee of the U. S. Chamber of Commerce, held in Seattle recently. The advantages of the British Columbia system, it was pointed out at the convention, are that it does not compel the timber land owner to cut his timber and market it as rapidly as possible to avoid being "eaten up" by annual taxes. Members of the committee intimated they looked upon the British Columbia system favorably and probably would submit to a referendum vote of the affiliated and local chambers of commerce some such change in the taxation plan. The convention of Northwest Lumbermen, held in Chamber of Commerce rooms, Seattle, lasted two days, at which time matters of interest to lumbermen were discussed.

Willamette Iron Works Builds Large Industrial Plant

The construction of a $500,000 plant for the manufacture of logging engines, Scotch marine boilers and marine engines by the Willamette Iron & Steel Works, at Portland, is of particular interest at this time because of the lack of any great activity in the Northwest in the field of large industrial construction during the past year. The new plant is being constructed on the water front site recently acquired by the company at the foot of Nicolai street. It will be equipped with over a thousand horsepower in electric motors and will employ a force of 200 men regularly. The Willamette Iron & Steel Works has operated a large plant in Portland for a number of years and is now the largest builder of logging equipment and Scotch marine boilers in the West. Upon moving to its new quarters, the company will work this field more aggressively and in addition will specialize in marine work of all kinds, including the building of marine engines. It also plans to re-enter the field of locomotive building in which it was quite active a few years ago and for which adequate facilities are being provided at the new plant. Construction work and the installation of equipment will be completed and the plant ready for occupancy early in October.



Half-million dollar plant of the Willamette Iron & Steel Works that is being built on the former site of the Foundation Company's shipyard at Portland, Oregon.

Court Gives City Right to Take Utility Properties

A decision affecting the right of municipalities in acquiring properties of public utilities by eminent domain proceedings was recently handed down by the U. S. District Court for the northern district of California, southern division. The case was that of the city of Los Angeles vs. The Southern Sierras Power Co., and the ruling of the court, applying the theory of higher use, allows the city to take certain of the company's hydro-electric properties over the protest of the company. The company has appealed to the U. S. Circuit Court of Appeals by a suit for a writ of error. A resume of the case as prepared by one of the company's engineers follows:

The Southern Sierras Power Company is a public utility corporation operating under the jurisdiction of the California Railroad Commission. For many years it has generated and supplied hydro-electric power to seven counties in the southwest portion of the state, many sections of which are dependent upon this company as the only available source of hydro-electric power. The combined system of the Southern Sierras Power Company and its related company, The Nevada-California Power Company, includes eight hydro-electric generating plants and about 800 miles of high tension lines. No part of the system, however, comes within 40 miles of the city of Los Angeles, nor is the company's service devoted to the Los Angeles district.

The Southern Sierras Power Company acquired from the Mono Power Company 320 acres of land through which the Owens River flows in the so-called Owens River Gorge. In crossing this parcel of land the stream drops 421 feet, thus affording a favorable opportunity for the development of hydro-electric power. Immediately upon acquiring the property, the company began the construction of a power plant to be added to its existing generating and transmission system. Subsequent to this, the city of Los Angeles instituted proceedings in eminent domain to secure the right to all the water flowing through the 320 acres of land purchased from the Mono Power Company, together with a right of way for a tunnel through that property. The city had conflicting plans for development which would completely bypass the company's plant. The property in question is located more than 300 miles from the city of Los Angeles and is more remote than any other units of a comprehensive power development plan proposed by the city which includes unfinished power plants along the Los Angeles aqueduct.

The court refused to consider evidence of the service rendered by the company, the absolute dependence upon it for service of certain cities and communities or its relation to these cities and communities as an agent, with rates and service governed by the State Railroad Commission; but interpreted a California statute as holding the demands of a municipal corporation superior to that of any public service corporation, regardless of the service rendered by the latter and regardless of the necessities of the consumers dependent upon that utility. The court gave the city full power to exercise the right of eminent domain and instructed the jury to disregard the value of the plant, most of which had been constructed after the beginning of the legal action, when placing a value on the condemned property. This latter point was contested because the suit was not brought to trial within one year, as required by statue. Under these instructions, the jury made an award of $525,000. The case is now awaiting a hearing before the higher court.

Boards of supervisors of three counties, representing the major portion of the area where the company is selling the power in question, have instructed their district attorneys to enter appearance proceedings before the higher court and will endeavor to show that the counties would suffer if the company on whom they depend were to be deprived of the power rights in question.

The City of Los Angeles has sold the $13,500,000 power bond issue voted in 1919 for the purchase of the Southern California Edison Company's distributing system within the city limits. These were sold on the basis of 88.63 per cent of the face value.

Catalina Island Convention

Inspiring Meeting of Southern District California State Association of Contractors and Dealers

After a lapse of twelve years, Catalina Island was again chosen for the annual outing by the Contractor-Dealers of Southern California. The two days, July 30th and 31st, spent in business and pleasure were instructive and inspiring—an atmosphere of appreciation of responsibility and individual indebtedness to the industry was the key note throughout.

In delivering his farewell address to the Southern Section, C. L. Chamblin president of the State Association, advocated a more unified purpose in supporting the next administration as well as association activities, and emphasized the fact that no man or firm following the practice of "cutting corners" could hope to accomplish constructive good nor succeed in business.

The report of the committee on standardization of motor and pumping plants, with Mr. F. T. Broiles of the International Motor Company, Los Angeles, acting as chairman, developed the fact that much work was needed to unify the methods and costs of motor pumping installations, differences in the present working standards of the power companies being reflected in some cases by 200 per cent variation in the costs of wiring and switchboards.

H. H. Courtwright of the Valley Electric Company, Fresno, in opening the discussion, submitted typical drawings of installations in use in the San Joaquin valley, clearly demonstrating the harm resulting to the industry because of the lack of standardization in such cases. The discussion resulted in the selection of a committee to cooperate with the power committee of the Pacific Coast Section N. E. L. A., and the power companies in the Southern District, W. S. Woods, Sacramento; F. T. Broiles, Los Angeles; D. Coldren, Riverside; Jess Zweiner, San Diego; and H. H. Courtwright, Fresno were to collect data at once for use in working out the problem. Robert Sibley, Editor of Journal of Electricity and Western Industry, gave as his opinion, that standardization of motor pumping installations is of real constructive value to the industry and to the field it serves and he tendered the offices of the Journal in publishing charts of typical installations, present and proposed, together with any helpful discussions which might be submitted. W. L. Frost, Southern California Edison Company, expressed the willingness of the Edison Company engineers to meet in joint committee work to solve the apparent difficulty. He took occasion to attack the "work shop" terminology heard during the discussion—stating that the substitution of such words as "pigs" for current transformers, or "cans" instead of steel cabinets, tended toward destroying the dignity of the profession, and made further addition to the confusion of electrical terms in the mind of the layman. Mr. Frost voiced a real appreciation on the part of the Southern California Edison Company, for the splendid support given to their financial campaign through the activity of the Electrical Development Army of the Los Angeles Electrical Club.

"Twenty Years Hence Electrically," was an illustrated feature story presented by Paul D. Howse. His charts were a series of clever, comic suggestions for further uses of electricity, and resulted in a laugh from start to finish. During a serious moment Mr. Howse forcibly brought out the value of electrical advertising by stating, that his firm alone, had installed during the last year a total connected load of 1500 kw. in display work.

The regular program of the afternoon meeting was followed by a round table discussion of subjects vital to the upbuilding of the contractor-dealer in business, and the presence of leading men of the California Electrical Cooperative Campaign together with the executive officers of the State Association of Contractors and Dealers, gave those in attendance an opportunity to hear the latest word in constructive policy and well directed effort.

The peculiar problems of the electrical industry during these readjustment periods and the opportunity and necessity for greater vision and more work, was in part, the message brought by Robert L. Eltringham, manager of the California Electrical Cooperative Campaign.

Earl Brown of San Francisco gave an interesting review of the trades and labor situation now so disturbed in that city. He stated that whereas 12,000 men are usually employed in the building trades, there are at present about 3500 at work, and under the leadership of the Chamber of Commerce the end of the "closed shop" was in sight. All present voiced the sentiment that the "American Plan" as introduced by San Francisco, represents the last word in solving trade lockouts and shutdowns.

G. E. Arbogast, representative of the California Electrical Cooperative Campaign, expressed the opinion that a better tone in the industry in Los Angeles is desirable and possible, claiming that only one-third of the electrical work in the city is done by the members of the association—under such conditions, he believed the standards are apt to go down and the convenience outlet be forgotten in the new work.

The subject of motor and motor wiring insurance in California, was introduced by H. H. Courtwright as a new departure in this part of the country. Such a question deserves the attention of thoughtful men of the profession and activity along such a line was promised.

The next district meeting was announced for September 17th, to be held at Riverside. The change in the time of the month was to prevent conflict between the meetings and the necessary collecting and other rush duties always present around the first of each month.

The convention closed with a banquet attended by 106 people with the ladies well represented. Many members of the party stayed over an extra day to enjoy the Island's pleasure resorts.

Robinson Farmer, secretary and treasurer, deserves the credit for the smooth manner in which the business sessions and entertainment features were conducted; in this he was ably assisted by district chairman L. Gans and representative A. L. Spring of the Cooperative Campaign in this district.

Electric Supply Jobbers Will Meet at Mt. Rainier

Unusual interest is evident in the forthcoming meeting of the Pacific Division, Electrical Supply Jobbers' Association, to be held at Paradise Inn, Mt. Rainier National Park, Washington, August 30, 31 and September 1, 1921. As this is the first meeting to be held in the Northwest for some time the attendance will be unusually large. Members of the industry are planning to go by bus line from Seattle, by boat and train from San Francisco and other California points and in some instances by private automobile. The discussions that take place will deal largely with the economic problems involved in the constantly lowering commodity prices, and the readjustment of trade conditions. In speaking of the meeting, Albert H. Elliott, secretary and attorney for the association had the following to say:

"We must make this Northern meeting a success, and that means you must go. Do not wait to enter Paradise (Inn) until you are dead! Ascend the Mountain (Rainier) while you have the strength, and Prophet Averill prescribes the plainest possible Ascension Robes. No Golf Sticks! No Trunks! Travel light! Bring your wives, children, warm clothes, tramping book and fishing tackle."

Pacific Coast Division N. E. L. A. Committee Appointments

A. B. West, president of the Pacific Coast Division, National Electric Light Association, has announced the committee appointments for the ensuing year:

Public Policy Committee—John A. Britton, Vice-Pres. & Gen. Mgr., Pacific Gas & Electric Company, San Francisco, California.

Public Relations Committee—R. H. Ballard, Vice-Pres. & Gen. Mgr., Southern California Edison Co., Los Angeles, California.

Engineering Committee—S. J. Lisberger, Engineer, Pacific Gas & Electric Co., San Francisco, California.

Accounting Committee—P. R. Ferguson, Auditor, The Southern Sierras Power Company, Riverside, California.

Publicity Committee—Charles Pierson, Southern California Edison Company, Los Angeles, California.

Commercial Committee—M. E. Newlin, Mgr. Comm'l Dept., San Joaquin Light & Power Corporation, Fresno, California.

Membership Committee— Northern Division: A. G. Jones, Special Solicitor, General Electric Company, San Francisco, California; **Southern Division:** R. A. Hopkins, Mgr. Power Division, Westinghouse Electric & Mfg. Co., Los Angeles, California.

Portland A. I. E. E. Formulates Plans for Active Year

Plans for the association work for the coming year were developed at a recent executive committee meeting of the Portland Section of the American Instiute of Electrical Engineers and indicate another very successful year for the local section. It is expected that the program committee, with R. M. Boykin of the North Coast Power Co. as chairman, and L. T. Merwin of the Northwestern Electric Company and A. S. Moody of the General Electric Company as members, will provide an excellent series of programs. The committee is already active and will announce the tentative program for the year's meetings shortly.

It was decided to continue this year the plan of holding joint meetings with the N. E. L. A. and the Contractor-Dealers, which proved so successful last year. The A. I. E. E. and the N. E. L. A. assume charge of alternate meetings and the Contractor-Dealers provide the program for one meeting during the year. The holding of joint meetings provides a medium where all branches of the electrical industry and all electrical societies in Portland are represented and where all phases and problems of the industry may be discussed to the mutual advantage of all. In addition, it makes possible, through the entertainment funds of the N. E. L. A. and the Contractor-Dealers, the serving of buffet luncheons and providing entertainment at the meetings which proved a big attendance builder to the meetings last year.

Chairman W. C. Heston and Secretary D. W. Proebstel of the Portland Section, A. I. E. E., attended the national convention of the Institute held in Salt Lake, the former as section delegate, where they participated in the discussion at the sections delegates' meetings and obtained many helpful ideas and suggestions which will be placed before the executive committee of the local section to help guide them in the conduct of the coming year's work.

Other committees in addition to the program committee mentioned were appointed as follows: Entertainment, A. C. McMiken, chairman; Lindsley Ross, E. F. Pierson, A. A. Tobey and L. E. Kurtichanof; membership, Carl Whitmore, chairman; J. V. Strange, W. A. White, I. B. Sturgis, E. H. Albright, C. E. Canada, Stacey Hamilton, A. D. Leach, F. M. Redman and E. D. Pierson.

The executive committee of the Portland Section, A. I. E. E., is: W. C. Heston, chairman, and D. W. Proebstel, secretary of the section; E. F. Whitney, R. R. Robley and J. E. Yates. The executive committee of the local section of the N. E. L. A. is composed of: J. D. Scott, chairman; W. A. Dunlap, vice chairman; J. S. Groo, secretary of the section; J. Hampton and W. T. Fitch.

Meetings of Interest to Western Men

The San Francisco Electrical Development League was addressed at a recent meeting by F. G. Dunn, consulting engineer, who discussed the water power possibilities on the west coast of North and South America and the feasibility of transmitting this power for long distances at 220,000 volts. Mr. Dunn predicted that it would be economically possible in the future to transmit power from the Columbia and Colorado Rivers to sections in the Mississippi Valley to supply this territory with much needed energy.

The Denver Section of the American Institute of Electrical Engineers has elected the following officers: B. C. J. Wheatlake, chairman; E. A. Phinney, vice chairman; Robert B. Bonney, secretary-treasurer. The officers of the section and the past chairmen who reside in the section territory, which includes all members residing within 120 miles of Denver, constitute the executive committee. The past chairmen at present are: H. S. Sands, Westinghouse Electric & Manufacturing Co., Denver, Colo.; Norman Read, Colorado Power Co., Denver Colo.; Dean H. S. Evans, University of Colorado, Boulder. Colo.; D. C. McClure, Denver Gas & Electric Co., Denver, Colo.

The San Francisco Engineers' Club has issued a roster of the names of its members, their business and home address, together with business and residence telephone numbers of its members. There is also appended the rules and bylaws of the club and the officers of the club since the date of its inception in 1912. The San Francisco Engineers' Club now numbers almost six hundred members and is an institution that has become recognized as the home of all local engineering and technical society activities. J. E. Woodbridge, Pacific Coast representative of Ford, Bacon & Davis, is the president of the club.

The Los Angeles Section of the A. I. E. E. has elected officers and appointed committees for the coming year. Herbert H. Cox is chairman, J. N. Kelman, secretary, and E. R. Stauffacher, assistant secretary. The executive committee consists of these officers and R. W. Sorenson, Otto Miller. Carl Johnson and H. C. Gardette. The membership committee consists of Carl A. Heinze, chairman; O. F. Johnson, N. B. Hinson, R. A. Halpenny and R. A. Hopkins. At present the section has 195 members and 89 student members.

The Ogden Chapter of the American Association of Engineers held its first of a series of weekly luncheons at the Weber Club recently. President B. W. Matteson was toastmaster. The first speaker was Captain Ora Bundy, in charge of the quartermaster department of the new U. S. government arsenal recently completed at Ogden. Captain Bundy extended an invitation to the engineers to inspect the arsenal, and spoke of other activities at Ogden, urging the engineers to get back of the Wild West Show, to be held at Ogden in September.

COMING EVENTS

INTERNATIONAL ASSOCIATION OF MUNICIPAL ENGINEERS
Colorado Springs, Colo.—Sept. 6-9, 1921

ROCKY MOUNTAIN DIVISION N. E. L. A. AND COLORADO ELECTRIC LIGHT, POWER AND RAILWAY ASSOCIATION
Glenwood Springs, Colorado, Sept 19-22, 1921.

PACIFIC DIVISION NATIONAL ELECTRICAL SUPPLY JOBBERS' ASSOCIATION
Mt. Rainier National Park, Washington, Aug. 30, 31 - Sept. 1, 1921

H. R. Bashford Company have removed their wholesale departments to the new Furniture Exchange Building on New Montgomery Street, San Francisco, and are now occupying spacious quarters on the first floor with a line of household labor-saving appliances. The officers of this company are: H. R. Bashford, president, and G. P. Egleston, general manager.

Keeler-White Company have established their Los Angeles office at 211 So. San Pedro Avenue, in a one-story brick building 30 x 100 ft. They will carry a full stock of their various lines at their new location.

Gordon A. Furlong has opened an electric shop at Alamosa, Colo., and will handle a complete line of household electrical appliances, and in addition do electrical repair and contracting work.

W. H. Whiteside, head of the Western Electric Company in Pasadena, California, is on a business trip through northern California.

P. S. Shrylock has purchased and is now in control of the Buena Vista Electric Light & Power Co. of Buena Vista, Colo. The new manager announces that he contemplates making some improvements in the property.

The Electrical Equipment Co. will occupy the new building now in course of construction at 314 North Central Avenue, Phoenix, Ariz. The company now maintains five similar plants in other Arizona cities. E. L. Gielow of Phoenix is president and general manager.

The Electric Vacuum Cleaner Co., Inc., Cleveland, Ohio, has issued a pamphlet entitled "Your Central Station Electric Service." This little pamphlet is a definite expression of the good will and cooperation that is coming into the electrical industry.

H. A. Holland of Portland, Ore., has purchased the lines and plant of the Yaquina Electric Co. It is understood that no immediate changes in the property are contemplated.

The Main Electric Co. has been incorporated by J. S. Schaife, C. E. Peterson and E. A. H. Peterson, with a capital stock of $10,000 to carry on a general electric contracting, engineering and supply business in Portland.

W. E. Clarke, until recently Pacific Coast representative of the Washington Brick, Lime & Sewer Pipe Company, Spokane, has been promoted to the position of Pacific Coast manager. Mr. Clarke maintains offices in Seattle, at 1733 Westlake Avenue N.

E. M. Gray and **E. H. Streeter,** Snohomish, have leased a mill site on Lincoln and East Streets, on which they propose to erect a small modern sawmill plant, for cutting spruce siding. The plant will be electrically operated throughout.

The Westinghouse Electric & Mfg. Co. has issued an interesting and instructive pamphlet reviewing the operating efficiency of Westinghouse turbine units of 30,000 kilowatt and higher capacity. This covers a series of reprints from articles which originally appeared in technical and trade papers giving a record of the performances of eleven of these large units and of any trouble they have had, and some of the interesting features connected with their operation.

Manufacturer, Dealer, and Jobber Activities

The Busch-Sulzer Brothers Diesel Engine Company is installing a 750-hp. Diesel engine for the city of Palo Alto, California.

Robert J. Ward & Company, designers and manufacturers of lighting fixtures, 206 South Thirteenth St., Philadelphia, announce that they are about to place upon the market a new electrical article called a "Tassel Plug," for placing at the bottom of a chandelier as a plug attachment to which may be attached toaster, percolator, lamp or appliance where an extra plug attachment is desired.

J. W. Thompson, formerly with Alexander and Lavenson Co., is now with the Western Agencies, Inc., 711-715 Mission St., San Francisco, as a sales manager.

The Kwick-Lite Electric Corporation, 360 Kearny St., is manufacturing and marketing the Kwick-Lite electric lantern which has special safety features with two lamps and a duplex battery, which assures reliability. This is an especially dependable lantern for railroad, factory, mining, marine and general household uses.

The Turner Brass Works, Sycamore, Ill., has recently perfected and placed on the market a new style Turner blow torch.

The Edison Electric Appliance Company, Inc., 5660 W. Taylor St., Chicago, Ill., manufacturers of the Hughes Edison electric ranges, have placed on the market an entire new line of electric ranges. There are seven models in the new line varying in size from a three-burner, low oven type, to a large six-unit, two-oven and two-boiler equipped type. The ranges are furnished, as specified, with either the sheath wire or the open coil type surface heating units. The new ranges are equipped with a specially accurate oven thermometer and have other features which make them especially up-to-date appliances for the electrical home.

Geo. A. Gray, of George A. Gray Co., has returned from the Sacramento and San Joaquin Valley districts and Southern California, where he studied business conditions. He will leave shortly for a trip through the Northwest for a similar purpose.

The Berthold-Strecker Company announces that the San Joaquin Light & Power Corporation has installed four additional Stevens Continuous Water Storage Recorders on the projects they are now developing.

W. W. Weir has been employed as manager of the electric home department of the Great Western Power Company, to assist and supervise the sales campaign of electric home equipment announced by the company.

P. N. Engel, president of the International Filter Company of Chicago, Ill., is leaving shortly for a visit to the Pacific Coast to make an investigation of market conditions for steam power plant design on the Pacific Coast.

The Trumbull Electric Mfg. Co., of Plainville, Conn., announce a new and revised line of externally operated entrance switches, 2, 3-pole, 125 and 250 volts, for use with or without meter trims or back plate. This line does not conflict with the line of meter service switches with contacts for testing which was announced a few months ago but does away with the meter trim which fitted against the meter terminal chamber and provides an end wall trim which snaps firmly into the end of the box and fits over the terminal chamber of the meter. These trims are made to fit Sangamo, G. E. 1-14 and Westinghouse O. A. meters.

The Ward-Leonard Electric Company has issued a pamphlet describing their Vitrohm (Vitreous enamelled) Resistor Units.

R. A. Patterson is the Pacific Coast representative of the Copper Clad Steel Company of Braddock, Pa., and expects to locate in San Francisco. The Copper Clad Steel Company manufacture the "Copperweld" brand of wire.

The Rutenber Electric Company, of Marion, Ind., manufacturers of electric heating and cooking appliances, calls our attention to an error in a note appearing in the July 15th issue of Journal of Electricity and Western Industry concerning the Western Agencies Company. The statement was made that the Western Agencies Company was factory representative for the Rutenber Motor Company. This should have been the Rutenber Electric Company, which is absolutely a distinct company from the Rutenber Motor Company.

The Cutler-Hammer Mfg. Co., of Milwaukee, Wis., manufacturers of electric controlling devices, announce the manufacture of a new automatic starter to be listed as No. 9604. The particularly interesting feature about this new starter is a new type of mercury overloads which are used. The overload relay consists of a glass tube carrying a mercury column, one section of which is surrounded by a thermal element. The element is heated in the same proportion as the motor windings. Excessive current passing for too long a period heats the coil, causes the mercury to boil and the vapor to pass up into a chamber at the top of the tube. This breaks the liquid mercury column and opens the circuit to the magnetic coil. After an interruption the thermal elements cool down and the mercury then becomes liquid. Until the overloads reset themselves the motor can not be started.

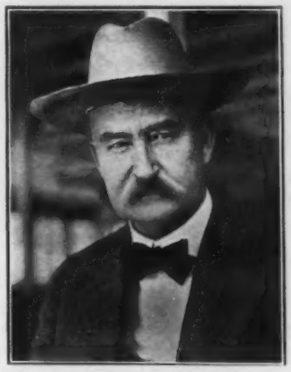
H. F. Hartzell, sales manager of Baker-Joslyn Company with headquarters in San Francisco, has been in Southern California looking after business interests of his company and incidentally dipping into the refreshing waters of Long Beach, California.

The Apex Electrical Distributing Company has recently put out a transparent dust bag for demonstrating the Apex Electrical Suction Cleaner.

L. B. Osborn has succeeded P. H. Smith as manager of the Thor Electric Shop at 124 Post Street, San Francisco. Mr. Smith succeeds E. A. Lynch as manager of the Los Angeles Thor Electric shop.

Personals

Albert B. Fall, Secretary of the Interior, former senator for New Mexico, farmer, stock raiser and mining man whose home is in Three Rivers, N. M., is in the West in the interests of his department. He is particularly investigating the possibilities of development of hydroelectric power in the National parks and on the public domain. As one of the members of the Federal Power Commission, it is highly important that he should have first hand information regarding the operation of



ALBERT B. FALL

the legislation affecting power development, and it is gratifying to those interested in water power legislation and the operation of the Federal Power Commission that Secretary Fall is making this personal investigation. While here, Secretary Fall stated that he was in favor of the establishment of the offices of important divisions of the Interior Department in the West. This is along the lines advocated by the Journal. Secretary Fall will visit all parts of the West before returning to Washington.

R. B. Hale, who did so much in forwarding the Panama Pacific International Exposition in its early stages of development, is now devoting much of his time toward forwarding the California Agricultural and Industrial Development Association, particularly with reference to putting in permanent exhibits in various prominent cities throughout the nation, these exhibits to set forth the industrial and agricultural possibilities of California. His first activity has manifested itself in the rehabilitating of the industrial and agricultural exhibit at the Ferry Building in San Francisco.

Robert L. Eltringham, executive manager, and **A. L. Spring,** field agent of the California Electrical Co-operative Campaign, were in attendance at the Catalina Island Convention of the California Association of Electrical Contractors and Dealers and offered many helpful suggestions in discussions concerning the betterment of the industry in California.

Doris Estcourt, assistant editor of Journal of Electricity and Western Industry, has resigned her position to become a writer on development problems of the Far East. She leaves for Peking, China, on the steamer Chinyo Maru, August 23, 1921, where she will remain indefinitely.

E. O. Edgerton, president of the East Bay Water Company with headquarters in Oakland, California, and formerly president of the California Railroad Commission, has recently returned from a business trip to the southern counties of the state where he has been looking into the question of increasing the efficiencies of water distribution.

Rolfe C. Gosrow, consulting metallurgist with headquarters at Marysville, California, has left for eastern business centers and will be gone for some weeks. Mr. Gosrow has given a great deal of attention to synthetic production of pig iron and is doing considerable research along these lines with a view toward possible western installations.

F. G. Baum, consulting engineer for the Pacific Gas & Electric Company for the Pit River development work, gave a most interesting talk recently before the San Francisco Electrical Development League on the 220,000-volt situation in the West. This paper will appear in an early issue of the Journal of Electricity and Western Industry.

J. W. Lane, of the Lane Electric Company, Long Beach, appreciates the wisdom of a correct application of electrical merchandising methods by contractor-dealers. With his store only one year old, Mr. Lane says he fully realizes the value of the services rendered by the Cooperative Campaign and is looking for more room to try it out on a much larger scale.

A. B. West, vice-president and general manager of the Southern Sierras Power Company, and **J. Bordwell,** assistant auditor of the company, are on an extended business trip to the power plants of this company situated in Inyo and Mono counties.

Harry J. Billica, district line materials manager for the Western Electric Company, has returned from an extended trip through the Northwest.

Professor Robert L. Daugherty of the Department of Mechanical Engineering at the California Institute of Technology was selected to head the Los Angeles section A. S. M. E. The section now has 168 members, closing its last year in third place for percent increase during the year. The first regular meeting will be called for the latter part of September.

J. W. Redpath, secretary of the California Association of Electrical Contractors and Dealers, says, "Sell by the Trade Mark" in all electrical affairs of the future. In other words, now is the time for all to co-operate in a real, helpful, substantial manner.

H. L. Harper, president of the Los Angeles Electic Club, after having put over a successful season with his club activities, is preparing for renewed activities in the fall. The slogan, "I Am a Stockholder in My Power Company—Are You?" and the manner in which the slogan was put over in a recent drive has caused nationwide comment.

E. S. Jones, formerly assistant engineer for the Pacific Gas & Electric Company at Sacramento, California, is now engineer for the Honolulu Gas Company, Ltd., at Honolulu, T. H.

Robert W. A. Brewer, well known in cities of the West for his excellent work for the British Government during the war as a captain in the British service and inspector for the British supplies that were being purchased in the West, is now located at Buffalo, N. Y., where he has undertaken consulting mechanical engineering work as a carburetion specialist.

Cruse Carriel, formerly associated with Journal of Electricity and Western Industry but more recently acting as Oriental correspondent for the Journal, has returned for a brief visit to Pacific Coast cities and is spending some time in San Francisco.

John R. Tomlinson, prominent contractor-dealer of Portland and treasurer of the Oregon Association of Electrical Contractors and Dealers, has been a potent factor in guiding the destinies of the organization and feels that his goal will have been reached when the Northwest Electrical Service League has accomplished its purpose.

Mr. Tomlinson is one of the real veterans in the electrical contractor-dealer business and is well known throughout the Northwest in this field. He began the business 18 years ago with the M. J. Walsh Company, and after 8 years helped organize the firm of Pierce-Tomlinson Electric Company, which has grown from a small shop to its well equipped and modern up-town store. He has thus seen this branch of the electrical industry grow from practically nothing to the important position it now occupies, namely the most important factor in the distribution of electrical merchandise and electrical installations.

JOHN R. TOMLINSON

He has perhaps done more than any other one man in the interests of the Oregon Association of Electrical Contractors and Dealers, having tided it over many a rough spot by helping hold the members together when dissension threatened the ranks. He is a strong advocate of cooperation in the industry and helped organize the Northwest Electrical Service League and is now one of the prominent members of the advisory committee of the League.

Norman H. Sloane, secretary-manager of the California Agricultural & Industrial Development Association, with headquarters in the Ferry Building, San Francisco, is undertaking some extended activities for the betterment of industry and agriculture in the West. The California Industries Association and the California Development Board have recently been combined into the organization of which Mr. Sloane is now the secretary-manager. The function of the new organization is to

NORMAN H. SLOANE

bring the city to the country and the country to the city in the development of industrial and agricultural life of the West. A survey of the state of California is being made as to market conditions, home building, industrial development and many other factors of vital interest to western growth. The work in which Mr. Sloane is engaged is of such high character as to command the earnest backing and hearty cooperation of all well wishers of the West.

David P. Barrows, president of the University of California, has been appointed a member of the National Research Council. President Barrows' appointment is for a period of three years.

George C. Westby, consulting metallurgical engineer of Missoula, Montana, is now at Kamloops, British Columbia, where he is giving considerable attention to electro-chemical and electro-metallurgical possibilities of that region. Mr. Westby is well known for his activities in the copper smelter activities of the West.

Paul B. Kelly, research assistant at the University of California, who has written the important series of Cost Accounting articles now appearing in the Journal of Electricity and Western Industry, will return shortly from a two months' trip to Oriental ports. He is now in Shanghai after having spent one week in Korea and three weeks in Peking.

C. C. Hillis, secretary-treasurer of the Electric Appliance Company with headquarters in San Francisco, is reflecting honor and glory upon his organization as well as upon the electrical industry in general by the manner in which he is rolling up golf scores. Recently he has proven quite consistent in a 71 and 72 score at the Claremont Country Club course.

J. E. Brown, formerly of the Westinghouse Electric & Manufacturing Company, Boston Office, is now located in Los Angeles and has taken up the duties of Mr. Knost as Krantz representative and lighting specialist.

Herbert Fleishhacker, president of the Northwestern Electric Company of Portland, recently passed through Portland on the last leg of a motor drive with his family to the national parks of the intermountain and Pacific Coast states, visiting the local offices of the company and calling on bankers of the city.

Desmond Fitzgerald, well known hydraulic engineer for the Boston Metropolitan Water Board, and **Frederick L. Olmstead,** one of the country's leading authorities on landscape architecture, are investigating the water power situation in the national parks of California and will extend their investigations to the Kings River country.

E. B. Criddle, general agent for the Southern Sierras Power Company, is a recent San Francisco visitor and is attending sessions of the California State Railroad Commission in behalf of his company. Mr. Criddle has also been attending informal sessions held recently in San Francisco in behalf of the coming activities of the Pacific Coast Division, N. E. L. A.

Roland L. Oliver, president of the California Cap Company with headquarters in Oakland, California, is assisting in forwarding the hydroelectric development of the West by issuing helpful statistical data through the trade literature that is being sent out by his company, which will carry the message of the West into many allied industries not hitherto reached.

James Cranston, Northwest district manager for the General Electric Company with headquarters at Portland, Oregon, has undertaken the chairmanship of the electrical committee for the Atlantic-Pacific Highways Exposition to be held in Portland in 1925. Mr. Cranston is now actively engaged in getting preliminary designs, estimates and plans for the great exposition of that year.

Harry W. Turner, general manager of the Montana Electric Co., with headquarters in Butte, Montana, has returned from a trip of several weeks to the Hawaiian Islands and is spending several weeks in California. Mr. Turner reports business conditions in the Hawaiian Islands as depressed, due to the situation of the sugar market and the depreciation of Japanese labor. Business men, he states, think that the only solution is to pass legislation of such a character as to admit contract labor from the Chinese.

Fred Harvey, a prominent rancher situated near Galt, Cal., has been elected president of the Association of California Farm Bureaus for the ensuing year. Mr. Harvey is a graduate of the Massachusetts Institute of Technology from their engineering courses and he brings to the new office an analytical mind of unusual caliber. There is a message for the electrical industry and a message from the electrical industry to be given to the Farm Bureaus, and it is believed that Mr. Harvey will assist in carrying these messages with the utmost clarity.

Dexter S. Kimball, a graduate of Stanford University and now Dean of Engineering at Cornell University, has been nominated for the presidency of the American Society of Mechanical Engineers. Dean Kimball, it will be remembered, is a well known figure in the West. For many years he was engaged in engineering activities with the Union Iron Works at San Francisco. He is the author of several well known text books and is today one of the leading figures in engineering life of the nation. Men of the West will take unusual interest in assisting Dean Kimball in every way possible in the putting over of a successful year with the American Society of Mechanical Engineers.

Parker M. Robinson, with the Westinghouse Electric & Mfg. Co., has been transferred to the Los Angeles office from East Pittsburgh to take up his duties as steam power plant equipment specialist. His duties on the Pacific

PARKER M. ROBINSON

touch with all sales regarding power plant equipment in the southwest, also northern part of Mexico. Mr. Robinson is a graduate of the University of Pittsburgh, and Yale University (Sheffield Scientific School). He has been connected for the past two and a half years with the Engineering Department of the Westinghouse Electric & Mfg. Co., at East Pittsburgh. During the war Mr. Robinson served as a First Lieutenant in the Ordnance Department of the United States Army.

Obituary

John S. Andrews, president and manager of the Ferro Concrete Company, Seattle, died in Seattle recently. Mr. Andrews was one of the best known builders of the Northwest, coming to Seattle in 1906 to erect the American Bank Building, the first reinforced concrete structure of the "skyscraper" type to be erected in the Puget Sound ccuntry. Following this construction, Mr. Andrews engaged in building a number of large buildings in the Northwest. He was born at Caithness, Scotland in 1861, coming to the United States in 1886.

Business Outlook in Western Market Centers

Reflecting the Trend of Community Thought on Conditions and Events Affecting Business and Industrial Activities Throughout the West

SAN FRANCISCO

Men in all lines of business are waiting for the final settlement of the strike in the building trades with more than usual interest. All indications now point to final settlement upon the American plan. The majority of business and industrial men are definitely behind the movement to establish all labor operations in San Francisco upon the American plan as being the only satisfactory solution to the unsatisfactory labor conditions that have existed in the city and vicinity for the last twenty years. With final settlement of the building trades strike there will be a large resumption of building activity and a decided stimulus to all lines of commercial activity.

In general, business remains unchanged. Retail merchants are buying only for immediate needs. Collections are fair. There is, however, a definite undertone of optimism, and it is felt that business in the Bay District will rapidly reflect the improvement which is now becoming apparent throughout the East.

LOS ANGELES

General business conditions continue to show stability, and, in most instances, growth as well.

The summer season is about over and strictly hot weather trade has been forced to accept a market decrease in quantity for 1921. This applies to ice companies, dealers in summer furniture, and in the decreased population at the seaside resorts. Small fan motor business and electric driven refrigeration machines have been out of season all summer.

Building operations continue to set new records, in spite of lower unit costs. This is a real sign of volume and with labor plentiful there is not the waste of last year in bidding for skilled help. The soundness of a reduced price policy for 1921 crops, adopted by many grower organizations, seems to be justified by the volume of business done, and there will be little to carry over as a result. Combined totals compare favorably with 1920.

Manufacturing industries continue to increase in numbers, swelling total outputs, although separate lines, as a rule, report volume about the same as last year, with unit values some lower.

Banking figures still show small increases for the district, with local conditions in some neighboring cities making 25 per cent to 30 per cent gains over same date last year. Conservative people are still wondering how to explain the throwing away of the public funds, as a result of the action of the City Council. The Edison purchase bonds were sold under peculiar circumstances with a loss estimated anywhere from $500,000 to $2,000,000.

The oil industry finds this a good time to adjust itself to the American Plan, as low prices for oil and high costs of operation do not mix well, for long. As a result, activity is only on the increase in exceptional fields, and elsewhere a letting up is noticeable.

SALT LAKE CITY

Many indications point to a turn for the better in business conditions in the intermountain section. One of the most notable features in local banking circles is the announcement by the federal reserve bank that it has reduced its rate of rediscount from 6 to 5½ per cent, which is an indication of less stringency. The demand for money continues, but considerable restriction is being made as to loans. The country banks, which are being called upon to finance farmers, are in turn calling on the city banks for accommodation.

Building operations, principally the building of homes, continue to be very active, and this favorable situation is reflected in greater demand for electrical material of the class used in such building. Ranges, and also smaller appliances, are moving somewhat more satisfactorily than they have for some time past, due principally to price adjustments in several lines.

Crop conditions are excellent practically throughout the intermountain section, and harvesting is now being done. It is expected that there will be a more normal marketing of crops this year than for some time past, with more satisfactory results to farmers, even at lower prices than prevailing last year, because of the reductions in cost of raising the products. Wool is moving, and while the movement of this commodity is slow, a substantial percentage of the crop has been sold.

PORTLAND

Buyers' week, with a record attendance, held recently, had a very marked stimulating effect upon wholesale buying, and early Fall buying coupled with this has tided the city over the recent period of depression in wholesale and retail lines. The general business situation looks better daily and it is expected that a gradual improvement will take place from now on. There is a brighter prospect for the lumber industry than for some time, because of the anticipated large purchase of the railroads, a fair export trade, particularly with Japan, and the increased activity in building. Contracts will soon be let for three new hospitals costing approximately $600,000, several new public school buildings to cost half a million dollars and a $1,250,000 apartment-hotel. In addition to this, two large industrial plants, each costing approximately $400,000, are nearing completion. Export business of the port is very good, with wheat leading in value, and it is expected that the value of exports this year will lead that of last year by many millions of dollars. General price reductions in electrical goods and increased activity in building are beginning to manifest themselves in the volume of business being done by the electrical contractor-dealers.

SEATTLE

Pending a clearer view of crop returns and the disinclination to buy on falling market, conditions have not materially improved in the Puget Sound section during the past month. Manufacturers in the district report general volume of business has shown no particular change. However, there is an optimistic feeling prevalent and this extends to the jobbers and retailers. Stimulation of business as a whole is forecasted by prospects of agricultural crops, and this coupled with the reopening of mills and logging camps throughout the district, indicates an encouraging return to more nearly normal conditions.

Unofficially reported the fruit crop of the Wenatchee Valley district will bring to the growers about $17,000,000, while the growers in the Yakima district will be enriched this season by at least $20,000,000. The prunes and small fruits on the west side of the mountains, will, it is asserted, add more than $10,000,000 to this total. The harvesting of one of the largest crops of wheat ever grown in Washington is now well under way, and the aggregate returns from this source are expected to be at least $40,000,000, even though the price may average well under $1 per bushel. The stockmen, hit hard last year, now see light ahead. Spring lambs have been bringing fair returns, although high freight rates are keeping down the profits. The heavy snows of last winter and the late rains have kept the ranges in splendid conditions, with the result that sheep and cattle are fattening rapidly.

Favorable agricultural situation promises unusual purchasing in Seattle this fall. General purchasing has been curtailed to a minimum for more than a year, but with ready money in hand this fall, there should be an encouraging pickup in business.

The West Coast Lumbermen's Association, in a recent statement, covering activities of Northwest mills, for the week ending July 23, reported production of 50,584,143 feet, which is 34 per cent below normal. New business totalled 43,439,444 feet, shipments totalled 48,952,172 feet.

Construction News and Industrial Developments

Suggesting to the Engineer, Contractor, Manufacturer, Dealer, Agent and All Business Men Opportunities for New Business

THE PACIFIC NORTHWEST

PORTLAND, ORE.—The Northwestern Electric Co. of Portland has announced a 5 per cent reduction in its steam heating rates, made possible by a reduction in the price of fuel oil.

HOQUIAM, WASH.—A large oil distributing plant to serve Grays Harbor and contiguous territory will be constructed by the Union Oil Company of California during the next few months.

SALEM, ORE.—Application has been filed with the state engineer by Olga Netter of Aurora, Ore., to appropriate water from two unnamed tributaries of Pudding River for power development.

CHEHALIS, WASH.—The mill of the Meskill Lumber Company, near Chehalis, owned by W. F. Downs, recently destroyed by fire, entailing a loss of $75,000. Understood the plant will be rebuilt.

KELSO, WASH.—The Lewis River Hydro-Electric Power Company of Vancouver, Wash., has filed application covering four power projects on the North Fork of the Lewis River, above Kerns, Cowlitz county.

CHEHALIS, WASH.—The North Coast Company of Chehalis, Wash., is changing over their power plant from coal to hog fuel. Lewis & Watts of Seattle and Portland have a contract for the installation of a complete conveying system, and the necessary changes to the boilers.

EUGENE, ORE.—A new concrete forebay and penstock are being installed at the Eugene municipal hydroelectric plant on the McKenzie River. Service for the city is being supplied by the Mountain States Power Company while the plant is shut down for the new construction work.

MADRAS, ORE.—The installation of a new street lighting system has recently been completed by the Dechutes Power Company, under the supervision of A. M. Wilson, local manager. Madras now has 25 street lights which adequately light the business and residential sections of the city.

ABERDEEN, WASH.—The city council of Aberdeen has authorized the city attorney to protest before the public service commission the 4 cent increase in street car fare put into effect July 15 by the Gray's Harbor Railway & Light Company. The fare on the company's lines is now 10 cents.

LA GRANDE, ORE.—Residents of this city have circulated petitions requesting the city council to refrain from taking any further steps toward changing the town's street lighting system to a new and more modern type. Uncertainty of business conditions is given as the reason for the action.

SPOKANE, WASH.—In the U. S. District Court in Spokane recently, Judge Frank H. Rudkin ordered the sale of all the assets of the Wenatchee Valley Gas & Electric Company in order to pay up the receiver's certificates outstanding amounting to $147,000. The date of the sale was fixed for August 19.

EVERETT, WASH.—Harry L. Gary has been named temporary receiver for the Everett Bed Manufacturing Company of Everett, recently declared insolvent. An order has been issued by Judge Guy C. Alston in the Snohomish County Superior Court requesting the company to show cause why such receivership should not be made permanent.

SPOKANE, WASH.—The Boyd-Conlee Company, hay, grain, flour and feed dealers, have begun the construction of a $30,000 warehouse and feed mill. The main building will be 60 feet wide, one-story with cement floors and walls of 12-inch interlocking tile. The building will have 9,000 feet of floor space.

PORTLAND, ORE.—The city council has granting a building permit for the construction of a $200,000 surgical hospital to be built at 19th and Kearney streets for a group of local physicians. Plans will be prepared immediately by Strong & MacNaughton, architects, and construction will begin within three months.

PORTLAND, ORE.—The general contract for the construction of a five-story unit to the Good Samaritan hospital has been awarded to Trenchall & Parelius, local contractors. The structure will be of reinforced concrete with face brick exterior backed with hollow tile. It will be 38x124 feet in dimensions. Construction work will begin immediately.

PORTLAND, ORE.—Bids will be called for immediately on the construction of the four-story annex to the University of Oregon medical school on Marquam Hill. The proposed structure will be four stories and basement, 68x150 feet, of reinforced concrete construction, faced with brick and terra cotta trimmings. The estimated cost of this new unit is placed at $250,000.

WALLA WALLA, WASH.—Contracts between the city and the Pacific Power & Light Company for the illumination of the city's streets recently expired, and no steps have been taken toward renewal. The city commissioners are desirous of replacing the residential light standards with more modern types, and have set up several decorative standards for the people to inspect.

STAYTON, ORE.—The city council of Stayton has granted a franchise to Walter Ross of Portland to transmit electric power through the town and for individual use for manufacturing purposes. It is reported that Mr. Ross will erect a power plant for the distribution of light and power to farmers but will not cater to any business that belongs to the Stayton Light & Power Company. The franchise is for a period of 40 years.

KENNEWICK, WASH.—The Church Manufacturing Company is making plans for extending its cold storage facilities at Pasco and Kennewick. The grape juice manufacturing plant will also be enlarged, bringing its capacity up to 100,000 gallons this season. The Pasco plant is being improved in order to handle 130 to 150 cars of apples in cold storage, while the Kennewick plant will take care of from 40 to 50 cars. This increase in business has required an increase in capital stock from $250,000 to $350,000.

GEARHART, ORE.—Construction work will begin immediately on a quarter million dollar tourist hotel, which, when completed, will be the finest tourist hotel in the state. The structure will have 101 rooms, all with bath, and will be equipped and furnished in the most modern fashion. The hotel is being erected with a view to filling a long-felt demand for a beach resort hostelry at that place to take care of the rapidly increasing tourist business. It will be completed and ready for occupancy early next spring.

MARSHFIELD, ORE.—The Lignacite Fuel Company, with headquarters in Portland, which was recently incorporated with an authorized capital of $250,000, is to build a plant at Coos Bay to develop the Diers fuel system, according to announcement. H. C. Diers of the new company has given out no information, except that the concern is under contract to build its first plant on Coos Bay, at an estimated cost of $150,000, to develop the system and manufacture both metallurgical and domestic fuel from coal and mill wood waste.

MADRAS, ORE.—A new tariff granting increased rates for lighting and power service furnished by the Dechutes Power Company has been approved by the Public Service Commission and became effective July 1. The new schedules provide for an increase in residence lighting, commercial lighting and power rates while the rate for electric heating in connection with an electric range has been reduced from $5.00 a kw. per month to $3.50 per month. The new rates effect the towns of Madras, Culver, Redmond and Prineville.

MEDFORD, ORE.—An electric company is to be formed in Medford, according to report, by J. T. Gagnon, a local timber, sawmill and traction man who has decided to generate power to operate his Medford and Jacksonville mills and his electric railway line. A boiler and generator will be installed at the mill in Medford. Mill refuse will be used for fuel to operate the plant. The fare on the street car line between Medford and Jacksonville operated by Mr. Gagnon has been cut to 5 cents to stimulate travel between the two towns and to meet jitney competition.

PORTLAND, ORE.—A franchise has been granted by the city council of Portland to J. B. Schaefer and others to operate a street car line from Portland to Linnton, a remote district lying within the city limits. The new line will make use of a considerable portion of the old United Railway's track, long out of commission. In addition, about six miles of new trackage will have to be constructed. The new line, which it is proposed to finance by sale of stock to the residents of Linnton and the business men of Portland, will give the Linnton district, which is an important industrial center, a much needed transportation service.

ROSEBURG, ORE.—A special election to determine the amount of interest to be paid on bands for construction or purchase of a municipal light and water plant has been set by the city council for November 1. City voters recently authorized a $500,000 bond issue for the construction of a municipal light and water plant, but it is now deemed advisable to purchase or condemn the present plant and use the distribution system. In order to sell the bonds under the present conditions of the bond market it will be necessary to increase the interest rate and this will be put up to the voters. The bonds authorized by the people are to bear interest at the rate of 5½ per cent and can be used for orignal construction only. It has been suggested that the ordinance be changed or amended to allow the purchase of the present Douglas County Light & Water Company's plant.

PORT ANGELES, WASH.—The Northwestern Power & Manufacturing Company of this city has started construction on a new 4,000 horse power hydroelectric plant, estimated cost being $300,000. The capacity of the present plant, located on the Elwha River, five miles west of Port Angeles, is taxed to its capacity by the new industries located at Bremerton, Charleston, Port Angeles, Port Townsend and the Bremerton navy yard.

THE PACIFIC CENTRAL DISTRICT

MARYSVILLE, CAL.—The Yuba Manufacturing Company has secured the contract for building three large dredges.

RICHMOND, CAL.—It is understood that work will start in the near future on the proposed Proctor & Gamble plant.

OAKLAND, CAL.—The Severin Motor Car Company of Kansas City is arranging for the construction and operation of a factory in this city.

FULLERTON, CAL.—Contract for the installation of ornamental street lighting posts has been awarded to the Southern California Electric Co.

MADERA, CAL.—The sale of $28,000,000 worth of irrigation bonds to provide for the Madera Irrigation Project was authorized at an election held July 26th.

FRESNO, CAL.—Plans for the installation of new machinery and the enlargement of the storage capacity of the Central California Ice Company's plant have been announced.

FRESNO, CAL.—The San Joaquin Light & Power Corporation is to build a combined office, warehouse and garage building to cost approximately $20,000 at San Joaquin this fall.

RIO VISTA, CAL.—The Pacific Gas & Electric Company is constructing a 4,000-volt power line to supply the farmers on West and Donlon Islands and Reclamation District No. 341.

FRESNO, CAL.—Batchtold & Son, proprietors of the Selma Flouring Mill, which was destroyed by fire in May, have commenced reconstruction of a two-story, fire-proof cement block mill building.

OROVILLE, CAL.—Reclamation District No. 833, situated in the Gridley District, has filed with the supervisors a plan calling for future construction work to cost $700,000. This will consist of canal and drainage work.

SUSANVILLE, CAL.—The Tule and Baxter Creek irrigation districts have signed a contract with Leon Bly for the construction of the Eagle Lake irrigation system. The irrigation bonds have been validated and are now advertised and will be sold August 20.

SELMA, CAL.—The business men of this city have subscribed over $21,000 toward a home building program which is intended to relieve the local house shortage. The homes to be built will be purchased for 10 per cent down and 1 per cent of the purchase price per month in payments.

FRESNO, CAL.—An organization for the purpose of developing a power and irrigation project at Squaw Valley was undertaken here. The proposed reservoir will develop power ranging from 50,000 hp. five months from September to February to 188,0000 hp. during April, May and June.

ALLEGHANY, CAL.—A large amount of new machinery and equipment is being delivered here during the season of good roads. Two mines, the Rainbow Mine and the Sixteen to One, are installing new equipment and air compressors and planning for extensive underground operations.

BERKELEY, CAL.—Funds will be available in the Fall for the erection of several notable buildings at the University of California. The Henry Morse Stephens Memorial Hall, the New Physics Building and the Haviland Hall for the School of Education and the athletic stadium are among those planned.

FRESNO, CAL.—The San Joaquin Light & Power Corporation has obtained authority from the Railroad Commission to issue notes and prior preferred stock to the San Joaquin Valley Farm Lands Company for the purpose of bringing power for pumping water to the Tranquility Irrigation district and the James Irrigation district.

THE PACIFIC SOUTHWEST

ALHAMBRA, CAL.—The development of a larger water system is being considered by the City Trustees. New pumps are to be installed and other work carried out.

SANTA BARBARA, CAL.—A proposition that the Montecito district be permitted to buy a partnership interest in the Santa Barbara water system has been presented to the City Council.

LOS ANGELES, CAL.—A new office, warehouse and storage sheds will be built immediately by the Oil Well Development Company on property recently purchased at Fiftieth and Santa Fe streets.

LOS ANGELES, CAL.—Los Angeles Gas & Electric Corporation plans many improvements in coming years. New machinery is to be installed, and many new mains are to be laid. Improvements estimated at $5,855,000.

SAN DIEGO, CAL.—The Mexican Government has announced plans for the building of a string of modern lighthouses along the Lower California coast, the first one to be erected on Coronado Island, 12 miles off this port.

STRATHMORE, CAL.—The Strathmore Cooperative Association has commenced excavation on Santa Fe right of way in Strathmore for the erection of packing house building to cost $40,000. P. E. Stark will be manager.

EL SEGUNDA, CAL.—The matter of enlarging and extending the water system is still under consideration here. A report of the survey and estimate is expected to be made by Enginers Olmsted & Gillilen not later than August 15.

LOS ANGELES, CAL.—The Western Glass Products Company has purchased a site adjoining the American Aluminum Metal Products Company and the Empire China Factory at Burbank, Cal., and contemplates the erection of a factory.

FULLERTON, CAL.—Fullerton will spend $280,000 for city water extension system—16 miles of cast-iron mains and a 5,000,000 galion reservoir are included in the specifications. Plans will be completed by the time the bonds are sold.

LONG BEACH, CAL.—George Zeeman, president and general manager of the Asphaltum & Refining Company of Los Angeles, announces that plans are under way for the establishment of a refinery here to convert Signal Hill oil into gasoline.

FALLBROOK, CAL.—Fallbrook proposes to bond a modern system of irrigation from the San Luis Rey River to make available several thousand acres for citrus and other semi-tropical fruits. The river system will be supplemented by driven wells.

LOS ANGELES, CAL.—Plans for a Los Angeles branch factory of the Wayne Knitting Mills of Fort Wayne, Ind., are being prepared and will involve an expenditure of $500,000 for the erection of brick, steel and concrete buildings and for equipment of machinery.

SANTA BARBARA, CAL.—J. E. White, consulting engineer of Santa Barbara, states that plans are under way for the establishing of an adequate water supply for Summerland. Tentative plans have been made for formation of a water district, which will include this town.

LOS ANGELES, CAL.—The C. C. Brown Candy Factory, 621 So. Olive Street, has acquired a 99 year lease on property on the west side of Flower Street just south of Seventh, and plans are being prepared for a three-story building to be erected on same. The building is to be 60x165 ft. The investment is estimated at $75,000. The first floor is to be used by a retail department store, the upper floors to be occupied by a factory. T. Beverly Keim is the architect.

LONG BEACH, CAL.—Application to build a $750,000 drawbridge across Long Beach Channel at Los Angeles Harbor, was presented to Major A. D. Ardery of the U. S. District Engineer's office. With no protests at the hearing, the permit is expected in a few days.

DOWNEY, CAL.—Sealed bids will be received up to August 23 for the sinking of a well and the installing of a pumping plant on lands of the district about one-half miles south of Rivera, Cal., in accordance with plans and specifications on file in the office of the Board of Directors.

LOS ANGELES, CAL.—The Austin Company has secured the contract for a new factory building in Los Angeles, to house the Angelus Sanitary Can Machine Company. A new capping or closing machine, with a speed of 200 cans per minute, without solder, will be manufactured in a section of the new factory.

THE INTERMOUNTAIN DISTRICT

WELLS, NEV.—The Interstate Commerce Commission has granted permission of the construction of a railroad connecting Rogerson, Idaho, with this city. The road is 90 miles in length and will form a means of communication from southern Idaho to the Pacific Coast.

SALT LAKE CITY, UTAH—Zion's Co-operative Mercantile Institution, the largest department store in Utah, and one of the largest in the West, has let contracts for the construction of an addition to their building, which will cost $100,000. Work is to be started immediately. The addition will be four-story and basement, fireproof construction.

SALT LAKE CITY, UTAH.—Articles of incorporation and by-laws of the Lincoln Paint & Color Company, a Nebraska organization, have been filed with the Secretary of State. The company proposes to engage in business in Utah and will carry on the manufacture of and jobbing in paints, oils and leads. Its capitalization is $200,000. William Werrett Jr., is designated as agent of the corporaton in Salt Lake. The secretary of the company is F. L. Knapp.

TWIN FALLS, IDA.—Installation of a new street lighting system, to include erection of 108 ornamental curb lights along Main avenue and Shoshone street, has been authorized by the city council, and revised contract with the Idaho Power Company covering the work has been approved. Installation is to be done by the power company under the supervision of R. E. Bobier, supervising foreman of operations for the city. The material for the system has been on hand for some time.

OGDEN, UTAH.—The new Ogden plant of the Pacific Fruit Express Company has just been placed in operation. Built at a cost of $500,000, the Ogden plant compares with the best on the system. With the new plant operating at Ogden, the plant formerly operating in Evanston will be discontinued. A plant similar to the one at Ogden will soon be opened at Laramie. Facilities for the icing of 100 cars at one time are features. The new Ogden plant has a storage capacity of 20,000 tons. Electric power is used in the operations of the plant.

PEOPLE WE AVOID

The man who tells you how he would have conducted the war.

The man who carries his umbrella under one arm with the point sticking up behind.

The man whose friends are always being operated upon.

The man who hasn't missed a day's work in thirty years.

The man who has just sold his house for twice as much as he paid for it.

The man who thinks it is everyone's duty to "keep fit."

The man who is convinced you take yourself too seriously.

The man who has just bought a new car.

* * *

Conventions inspire conflicting emotions in the breasts of delegates, depending on whether they won or lost at poker, One sour misanthropist has produced the following essay on the subject:

A Convention consists of a large room full of a lot of tobacco smoke, a gavel, the man-whom-I-take-more-than-ordinary-pleasure-in-introducing-to-you-today, and a few auditors. The auditors are especially necessary to the convention. Auditor means listener. As auditors most conventionites are good sleepers. Also, most regular conventionites are expert golfers—African Golf.

Another thing especially important about a convention is the committees. There is a constant demand for committees of all kinds. A committee is something than which there is nothing than-whicher, or less than that, even. The most important committee is usually the law committee, which admits all members in good standing to the bar. Which is good standing.

After all the committees are teed and all the orators are torn, there is nothing left but for the convention to adjourn. Journeying is the best thing they do.

* * *

ITEMS FROM OUR DAILES

Canal Freight Shows Heavy Drop

But as there were no eggs or glassware in the consignment, the damage was very slight.

Believe Dead Woman Jumped From Train

A case of reflex action, presumably.

* * *

Rainfall is a complex subject, and one upon which no two people—especially farmers—ever agree. It is however, difficult to disagree with the luminous remark of the Irish farmer (doubtless inspired by the present drought in England) who said:

"An hour of ut now will do more good in five minutes than a month of ut would do in a week at anny other time."

* * *

WORK

According to some profound thinker there are eight days in the week—Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday, and Tomorrow.

Some people work on the first six and rest on the seventh.

Some rest on the first seven and do all their work on the eighth.

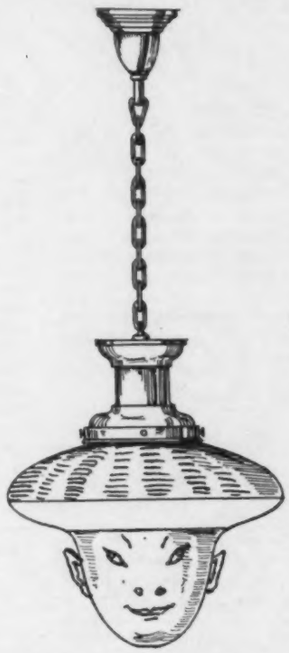
At the same time the eighth day workers are apparently the only ones who are really safe, as an encounter between two of them indicates. A bored-looking tramp approached one of the Arrived with the usual request.

"See here," said the prosperous one, "with all the work there is to do, how comes it that you are bumming? If you don't work you cannot expect to eat—not these days."

"Mister," answered the weary one, "my father died of work, my brother was hurt looking for work, my sister fell off a car coming from work, and I ain't going to take no chances."

* * *

ELECTRICAL HYBRIDS



IX—The Fixt-eur-asian

The Fixt-eur-asian's habits
Are as shy as any rabbit's,
Yet his shining face can drive away the gloom;
In celestial position
He's a very great addition
To the cheerfulness of any kind of room.

Where his home is he's a fixture,
And he's somewhat of a mixture,
For by daylight he is hardly seen at all;
But at night his face is lighted
Up and everyone's delighted
To see him hanging 'round the parlor wall.